
BLUE SEAL®

EVOLUTIONSERIES

Gas Fryers
GT45 / GT46 / GT60

Service Manual





WARNING: ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

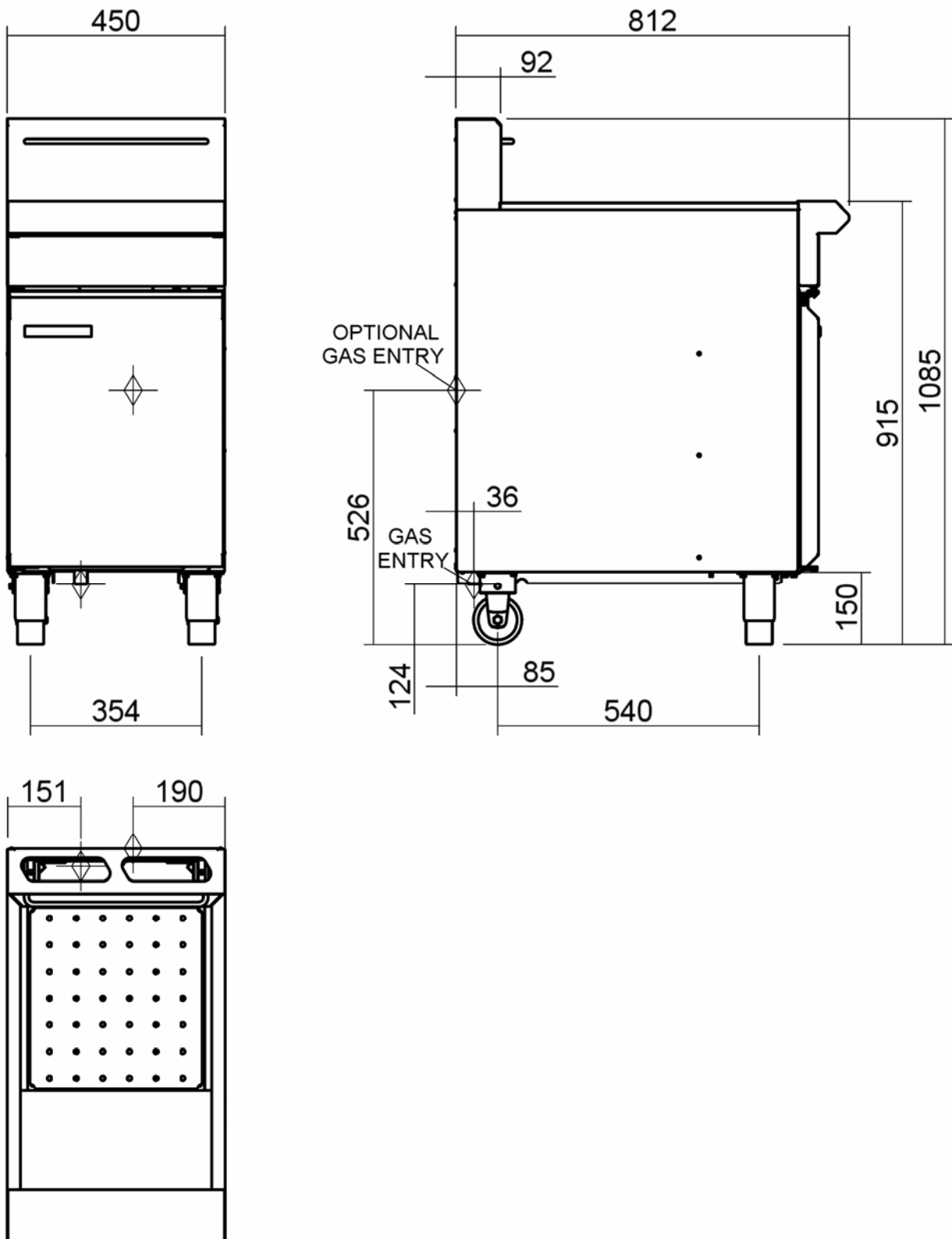


IMPORTANT: MAKING ALTERATIONS MAY VOID WARRANTIES AND APPROVALS.

This manual is designed to take a more in depth look at the GT45, GT46 and GT60 gas fryers for the purpose of making the units more understandable to service people.

There are settings explained in this manual that should never require to be adjusted, but for completeness and those special cases where these settings are required to change, this manual gives a full explanation as to how, and what effects will result.

Section	Page Number
1. Specifications.....	1
2. Installation.....	5
3. Operation.....	9
3.1 Description of Controls	
3.2 Explanation of Control System - Single Tank Fryers	
3.3 Explanation of Control System - Twin Tank Fryers	
4. Cleaning and Maintenance.....	13
5. Trouble-shooting Guide.....	15
5.1 Trouble-shooting Chart	
5.2 Fault Diagnosis	
6. Service Procedures.....	21
6.1 Access	
6.2 Replacement	
6.3 Adjustment / Calibration	
7. Accessories.....	29
8. Replacement Parts	30
8.1 GT45	
8.2 GT46	
8.3 GT60	
9. Circuit Schematics.....	41
10. Service Contacts.....	44
Appendix A: Gas Type Conversion.....	46

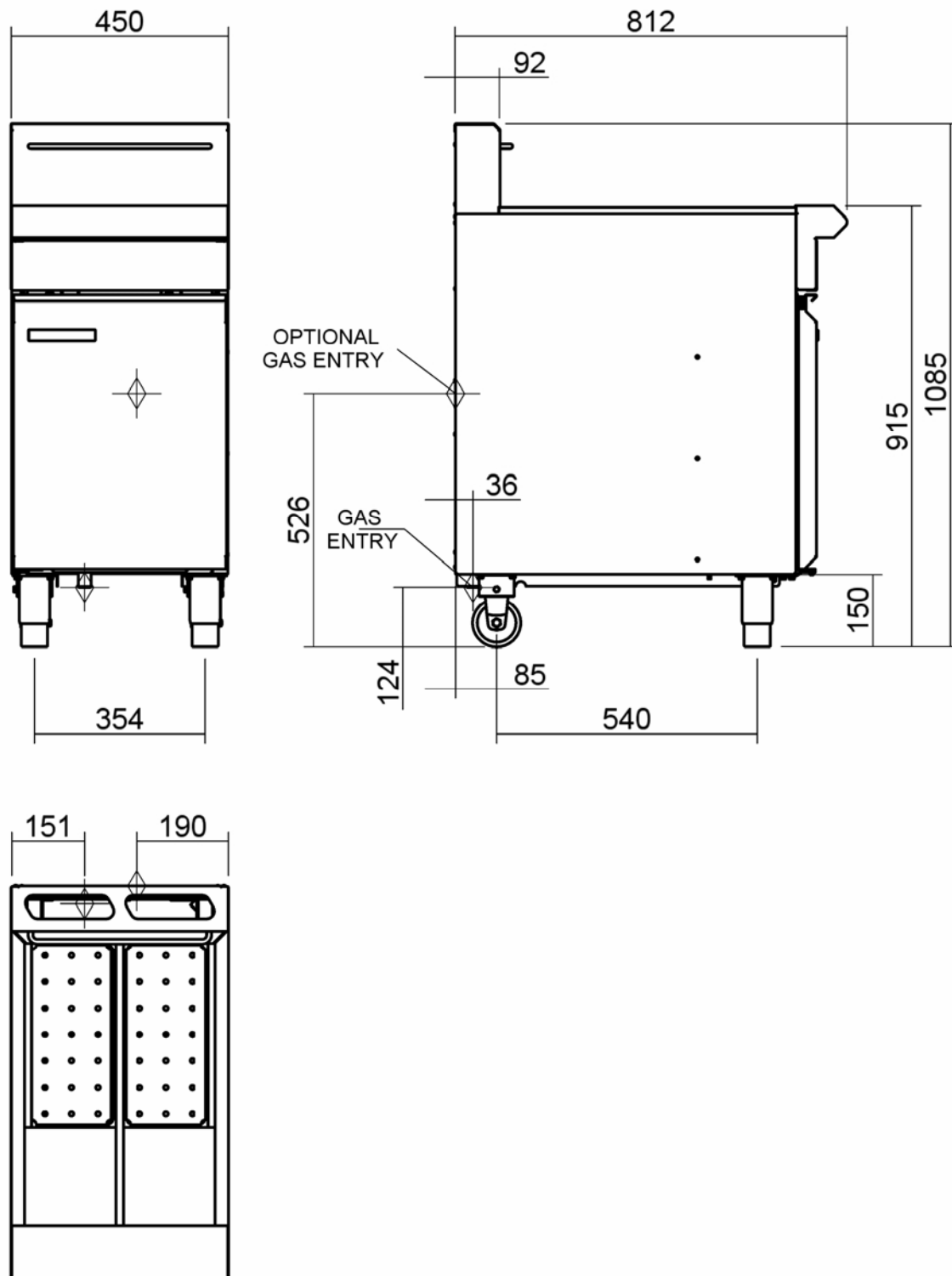
External dimensions: GT45**Legend**

- Gas connection entry point - $\frac{3}{4}$ " BSP male

Dimensions shown in millimetres

1 Specifications

External dimensions: GT46



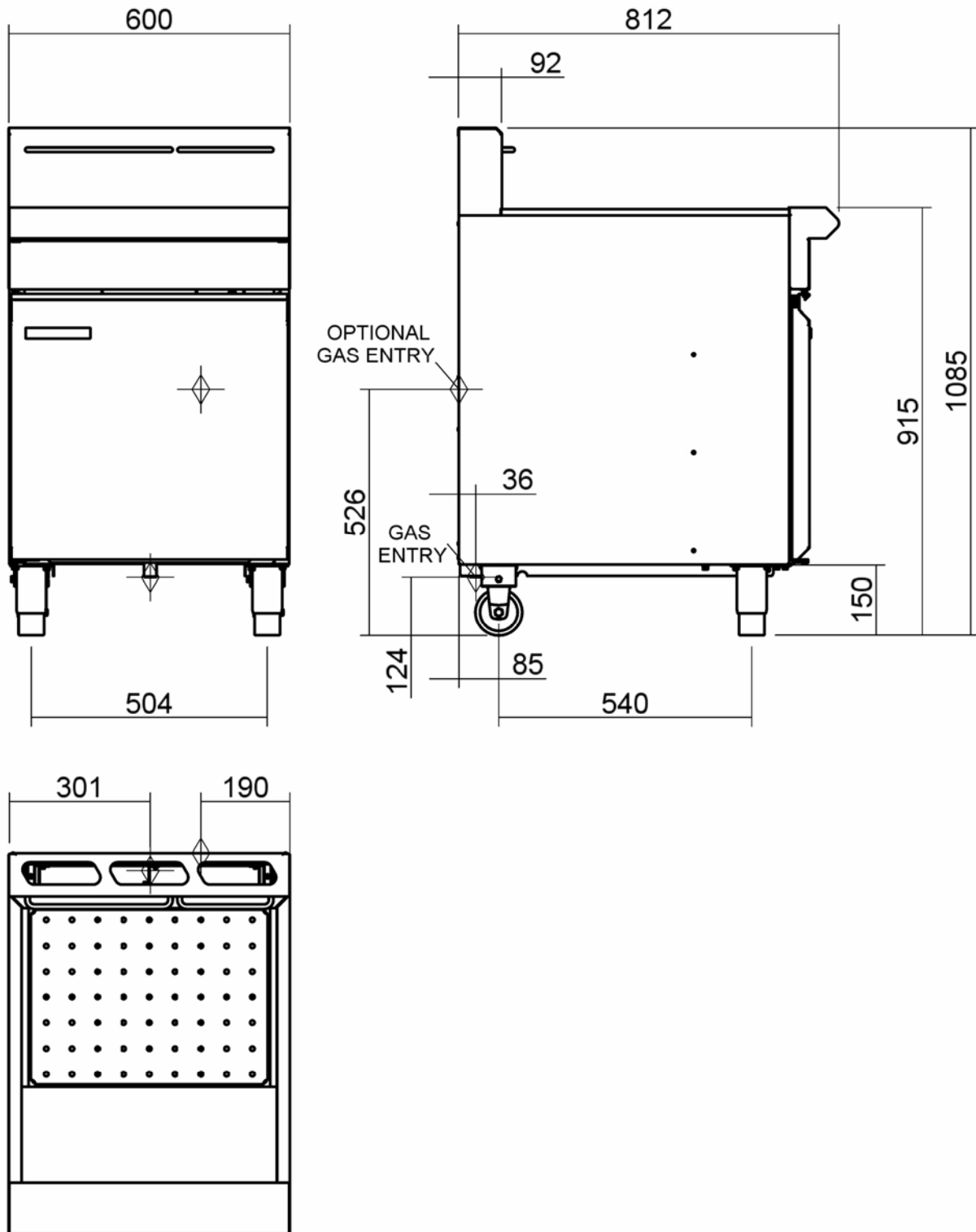
Legend



- Gas connection entry point - $\frac{3}{4}$ " BSP male

Dimensions shown in millimetres

External dimensions: GT60



legend



- Gas connection entry point - $\frac{3}{4}$ " BSP male

Dimensions shown in millimetres

1 Specifications

Gas supply (Non-UK models)

	Natural Gas	LP Gas (Propane)
Input Rating (N.H.G.C.)	90 MJ/hr (85,300 Btu/hr)	90 MJ/hr (85,300 Btu/hr)
Supply Pressure	1.13 - 2.00 kPa (4.5" - 8.0" w.c.)	2.75 - 3.00 kPa (11" - 12" w.c.)
Burner Operating Pressure	0.98 kPa (3.9" w.c.)	2.50 kPa (10.0" w.c.)
Gas Connection	$\frac{3}{4}$ " BSP Male	

Gas supply (UK models)

	Natural Gas (G20)	Propane (G31)
Heat Input (nett)	22.5 kW	22.5 kW
Gas Rate	2.26 m ³ /hr	1.75 kg/hr
Supply Pressure	20 mbar	37 mbar
Burner Operating Pressure	9.8 mbar	25 mbar
Gas Connection	$\frac{3}{4}$ " BSP Male	

Injector sizes

	Natural Gas	LPG
Main Burners	3.10mm	1.90mm
Pilot Burners (Non-UK models)	0.62mm	0.35mm
Pilot Burners (UK models)	0.45mm	0.30mm

Tank capacity

	GT45	GT46	GT60
Oil capacity	20l 16kg	13l (per tank) 10.5kg (per tank)	31.5 l 25 kg
Useable internal dimensions of tank (width x length)	365mm x 385mm	175mm x 385mm	545mm x 385mm
Useable depth of oil	80mm	80mm	80mm

Installation clearances

	Combustible surface	Non-Combustible surface
Rear	50mm	0mm
Left-hand side	50mm	0mm
Right-hand side	50mm	0mm
Top *	610mm	610mm
Front **	600mm	600mm

* Top clearance is from flue outlet to any above surface

** Front clearance is in order to facilitate easy operation, drainage and servicing of the appliance

Installation Requirements

NOTE:

- **It is most important that this appliance is installed correctly and that operation is correct before use. Installation shall comply with local, gas, health and safety requirements.**
- **This appliance shall be installed with sufficient ventilation to prevent the occurrence of unacceptable concentrations of health harmful substances in the room, the appliance is installed in.**

Blue Seal 'FAST FRI' gas fryers are designed to provide years of satisfactory service and correct installation is essential to achieve the best performance, efficiency and trouble-free operation.

This appliance must be installed in accordance with National installation codes and in addition, in accordance with relevant National / Local codes covering gas and fire safety.

Australia:	AS 5601	- Gas Installations.
New Zealand:	NZS 5261	- Gas Installation.
United Kingdom:	Gas Safety (Installation and Use) Regulations 1998.	
Ireland:	IS 820	- Non Domestic Gas Installations.

Installations must be carried out by qualified service persons only. Failure to install equipment to the relevant codes and manufacturer's specifications shown in this section will void the warranty.

Components having adjustments protected (e.g. paint sealed) by manufacturer, are only allowed to be adjusted by an authorised service agent. They are not to be adjusted by the installation person.

Unpacking

- Remove all packaging and transit protection from the appliance including all protective plastic coating from the door outer panel and exterior stainless steel panels.
- Check equipment and parts for damage. Report any damage immediately to the carrier and distributor.
- Report any deficiencies to the distributor who supplied the appliance.
- Check that the available gas supply is correct to that shown on the rating plate located on the inside of the access door.
- Check that the following parts have been supplied with the appliance:

GT45		GT46	GT60
Baskets 2		2	3
Basket Trays	1	2	1
Lid 1		1	1
Drain Stick	1	1	1

Location

1. This appliance must be installed in a suitably ventilated room to prevent dangerous build up of combustion products.
2. Installation must allow for a sufficient flow of fresh air for the combustion air supply.

Combustion Air Requirements

Natural Gas 24 m³/hr minimum.
LPG / Propane 24 m³/hr minimum.

3. Position the appliance in its approximate working position.

2 Installation

4. All air for burner combustion is supplied from underneath the appliance. The legs must always be fitted and no obstructions placed on the underside or around the base of the appliance, as obstructions will cause incorrect operation and/or failure of the appliance.
5. Components having adjustments protected (e.g. paint sealed) by manufacturer are only allowed to be adjusted by an authorised service agent. They are not to be adjusted by the installation person.

NOTE: Do not obstruct or block the appliances flue. Never directly connect a ventilation system to the appliance flue outlet.

Clearances

NOTE:

- **Only non-combustible materials can be used in close proximity to this appliance.**
- **In order to facilitate easy operation, drainage and servicing of the appliance, a minimum of 600mm clearance should be maintained at the front of the appliance.**

	Combustible Surface	Non Combustible Surface
Left/Right hand side	50 mm	0 mm
Rear	50 mm	0 mm

Any gas burning appliance requires adequate clearance and ventilation for optimum and trouble-free operation. The following minimum installation clearances are to be adhered to:

Assembly

This model is delivered completely assembled. Ensure that the legs are securely attached.

NOTE:

- **This appliance is fitted with adjustable feet to enable the appliance to be positioned securely and level. This should be carried out on completion of the gas connection. Refer to the "Gas Connection" section below.**

Optional Accessories (Refer to Replacement Parts List)

- Plinth Kit. For installation details, refer to the instructions supplied with each kit.

Gas Connection

NOTE: ALL GAS FITTING MUST ONLY BE CARRIED OUT BY A QUALIFIED SERVICE PERSON.

1. Blue Seal Fryers do not require an electrical connection, they function totally on the gas supply only.
2. It is essential that the gas supply is correct for the appliance to be installed and that adequate supply pressure and volume are available. The following checks should therefore be made before installation:-
 - a. **The Gas Type** the appliance has been supplied for is shown on coloured stickers located above the gas entry point and next to the rating plate. Check that this is correct for the gas supply the appliance is being installed for. The gas conversion procedure is detailed in this manual.
 - b. **Supply Pressure** required for this appliance is shown in the "Specifications" section of this manual. Check the gas supply to ensure that adequate supply pressure exists.
 - c. **Input Rate** of this appliance is also stated on the Rating Plate fitted to the inside of the access door and in the "Specifications" section of this manual. The input rate should be checked against the available gas supply line capacity.
Particular note should be taken if the appliance is being added to an existing installation.



NOTE: It is important that adequately sized piping runs directly to the connection joint on the appliance, with as few tees and elbows as possible to give maximum supply volume.

3. A suitable joining compound which resists the breakdown action of LPG must be used on every gas line connection, unless compression fittings are used.

The connection to the appliance is $\frac{3}{4}$ " BSP male.

NOTE: A Manual Isolation Valve must be fitted to the individual appliance supply line.

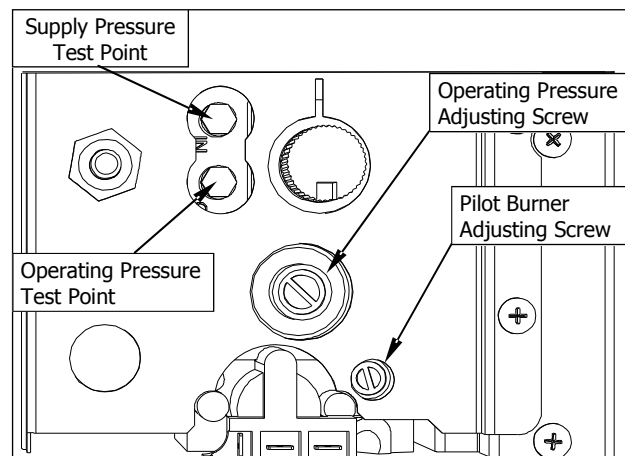
4. Correctly locate the appliance into its final operating position and using a spirit level, adjust the legs so that the unit is level and at the correct height.
5. Connect the gas supply to the appliance.
6. Check gas operating pressure to as shown in the "Specifications" section. If the pressure is incorrect, adjust the pressure by adjusting the regulator screw of the gas control valve as shown in the 'Gas Conversion and Specifications' section.
7. Check all gas connections for leakages using soapy water or other gas detecting equipment.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES .

NOTE: The operating pressure is to be measured at the upper test point (Supply Pressure) on the gas control valve located behind the access door and through the access hole in the control panel, this is to be carried out with all burners operating at the "High Flame" setting.

8. Turn 'OFF' the mains gas supply and bleed the gas out of the appliance gas lines.
9. Turn 'ON' the gas supply and the appliance.
10. Verify the operating pressure remains correct (Re-adjust if required, using the operating pressure adjusting screw as shown in the 'Gas Conversion and Specifications' section).
11. Check the pilot flame size. (Re-adjust if required, using the pilot adjusting screw as shown in the 'Gas Conversion and Specifications' section).



Commissioning

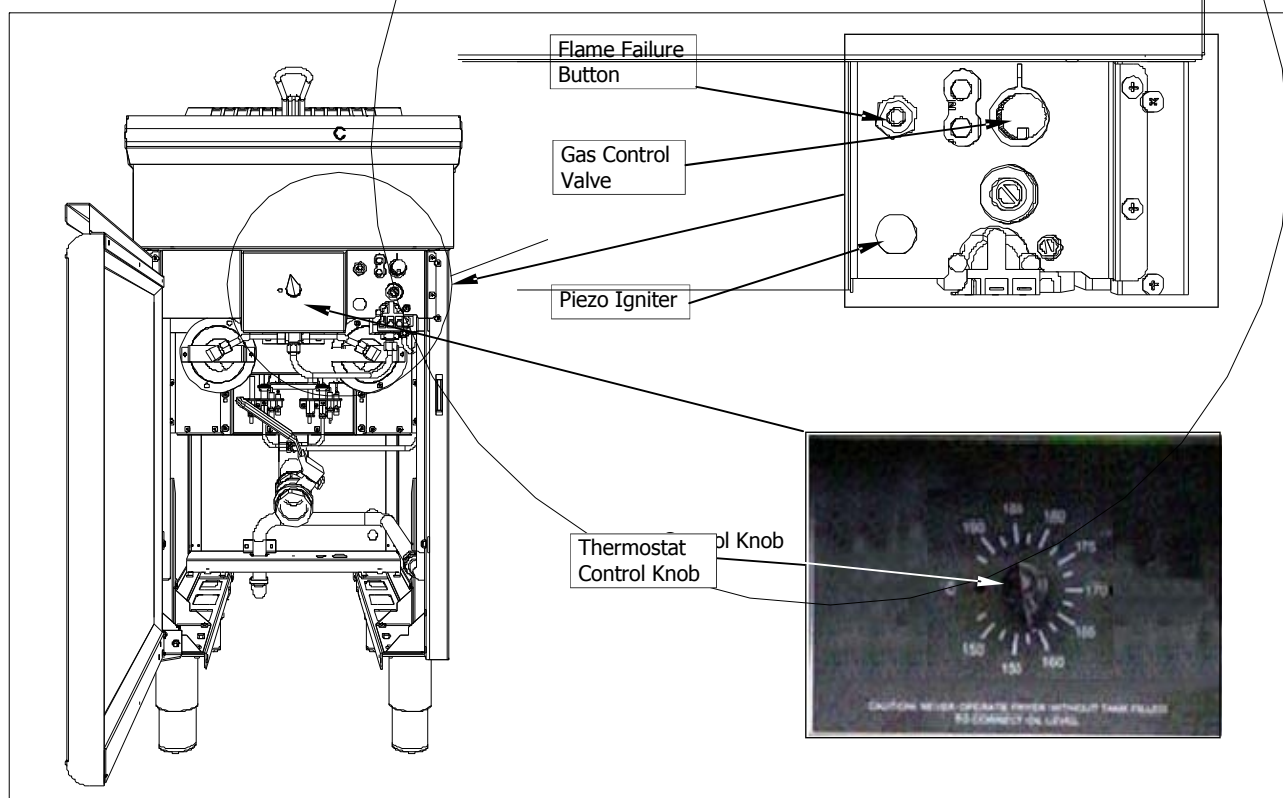
The following commissioning checks must be carried out before the fryer is handed over for use, to ensure that the unit operates correctly and the operator(s) understand the correct operating procedure.

1. Before leaving the new installation;
 - a. Check the following functions in accordance with the operating instructions specified in the "Operation" section of the User manual.
 - Light the Pilot Burners.
 - Light the Main Burners.
 - Check the Thermostat Operation (refer to the "Operation" section of the manual).
 - b. The thermostat operation check should be carried out by filling the fryer with oil/shortening to the oil 'FILL LEVEL' mark at the rear of the tank (refer to 'Filling the Tank' in the 'Operation Section' of the Manual) and setting the thermostat to 180°C. Light the pilot burners and turn on the main burners in accordance with "Operation Instructions" found in the User manual.
 - c. The calibration of the thermostat should be checked once the oil is up to temperature. If a discrepancy is found, the thermostat calibration should be referred to the supplier.
 - d. Ensure that each operator has been instructed in the areas of correct lighting, operation, and shutdown procedures for the appliance.
2. The User manual must be kept by the owner for future reference and a record of **Date of Purchase Date of Installation** and **Serial Number of Unit** recorded and kept with the manual. **(These details can be found on the Rating Plate attached to the inner R/H side of the front access door panel).**

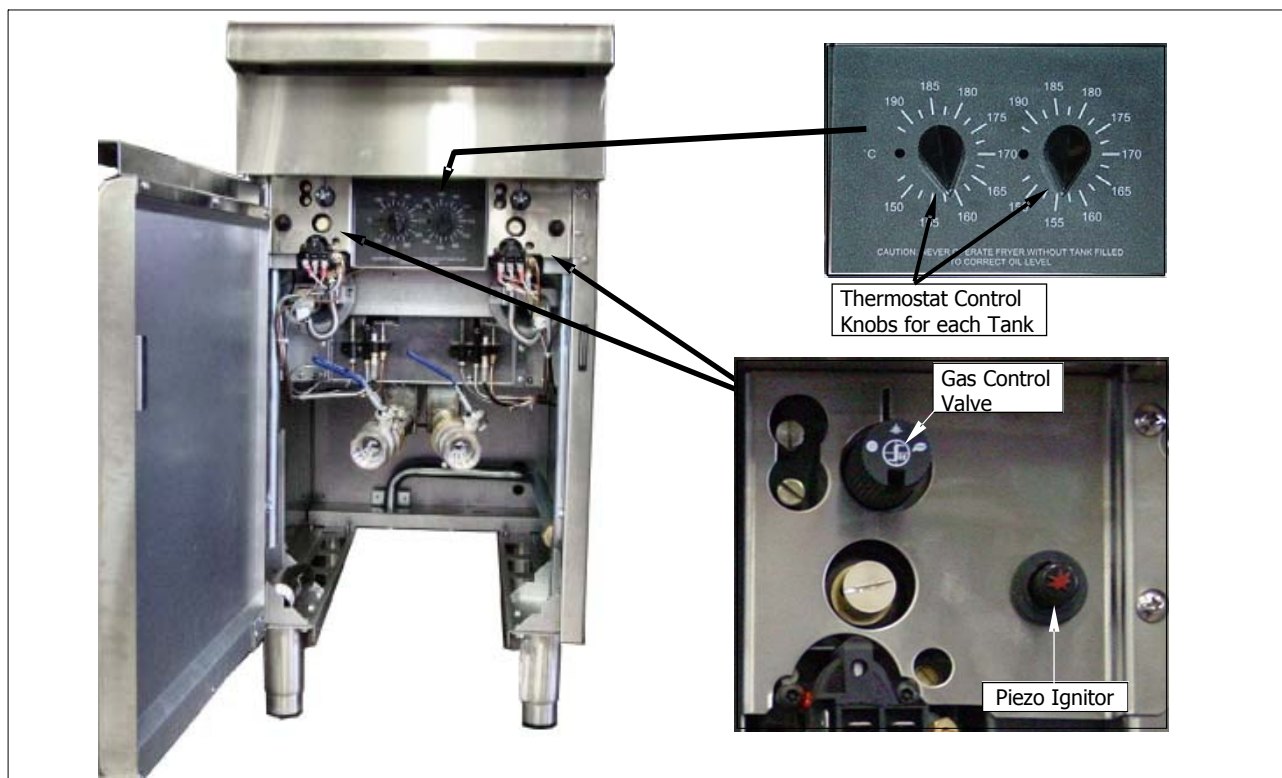
NOTE: If for some reason it is not possible to get the appliance to operate correctly, shut off the gas supply and contact the supplier of this unit.

3.1 Description of controls

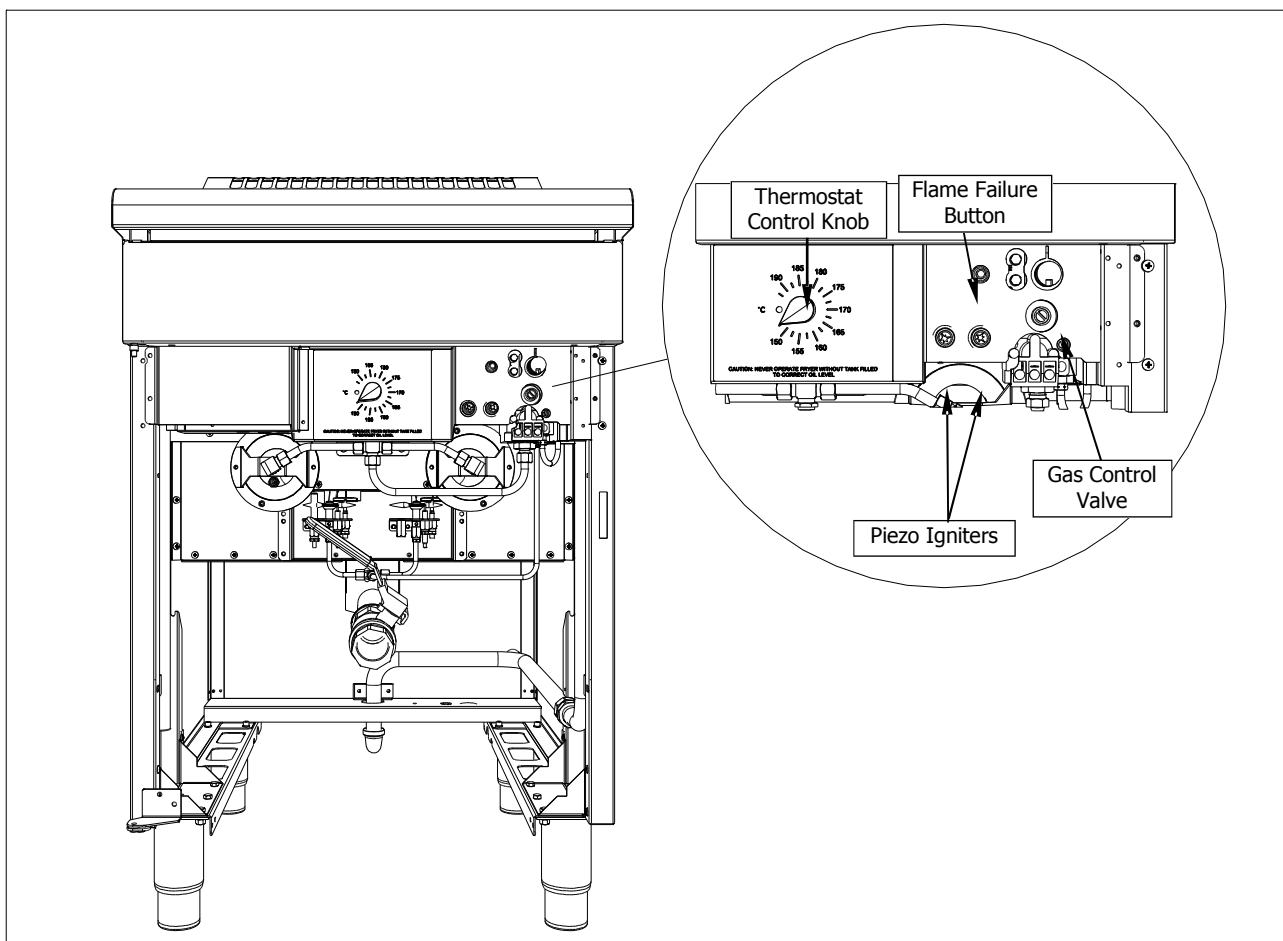
Single Tank GT45 Controls



Twin Tank GT46 Controls



Single Tank GT60 Controls



Lighting the Pilot Burners

GT45 Fryer (Single Tank)

1. With the fryer tank full of frying medium, the pilot burners can be lit.
2. Check that the gas supply is turned on at the mains supply.
3. Open the access door at the front of the appliance to access the control panel.
4. Rotate the gas control knob to the position marked "PILOT" and hold depressed.
5. At the same time hold the flame failure button depressed.
6. Depress the piezo igniter until the right hand pilot ignites.
7. Continue holding the gas control knob and flame failure button depressed until the left hand pilot cross lights from the right hand pilot.
8. Hold the gas control knob and flame failure button depressed for approx. 10 to 15 seconds after igniting the second pilot burner, then release, both pilot burners should remain alight. If the pilot burners do not ignite, repeat Items 1 to 8 above.

GT60 Fryer (Single Tank)

1. With the fryer tank full of frying medium, the pilot burners can be lit.
2. Check that the gas supply is turned on at the mains supply.
3. Open the access door at the front of the appliance to access the control panel.
4. Rotate the gas control knob to the position marked "PILOT" and hold depressed.
5. At the same time hold the flame failure button depressed.
6. Depress the right hand piezo igniter until the right hand pilot ignites.
7. Continue holding the gas control knob and flame failure button depressed.
8. Depress the left hand piezo igniter until the left hand pilot ignites.
9. Hold the gas control knob and flame failure button depressed for approx. 10 to 15 seconds after igniting both pilot burners, both pilot burners should remain alight. If the pilot burners do not ignite, repeat Items 1 to 9 above.

GT46 Fryer (Twin Tank)

1. With the fryer tank full of frying medium, the pilot burners can be lit.
2. Check that the gas supply is turned on at the mains supply.
3. Open the access door at the front of the appliance to access the control panel.
4. Rotate the right hand gas control knob to the position marked "PILOT" and hold depressed.
5. Depress the right hand piezo igniter until the right hand pilot ignites.
6. Continue holding the gas control knob depressed for approx. 10 to 15 seconds after igniting the right hand pilot burner, the pilot burner should remain alight. If the pilot burner does not ignite, repeat Items 1 to 6 above.
7. To ignite the left hand pilot burner, rotate the left hand gas control knob to the position marked "PILOT" and hold depressed.
8. Depress the left hand piezo igniter until the left hand pilot ignites.
9. Continue holding the gas control knob depressed for approx. 10 to 15 seconds after igniting the left hand pilot burner, the pilot burner should remain alight. If the pilot burner does not ignite, repeat Items 7 to 9 above.

Lighting the Main Burners

1. Ensure that the pilot burners are alight, by opening the front access door of the appliance and checking that both pilot flames are alight.
2. Depress and rotate the gas control knob to the 'Full Flame' position.
3. The main burners will now ignite automatically off the pilot burners.

Note:

- If the main burners are turned on immediately after the pilot burners are lit, a delay of approximately 30 seconds will occur until the thermopile (which provides power to open the main valve) has heated up off the pilot burners.
- The main burners will not light if the frying medium temperature is above the thermostat set temperature.
- Turning the gas control knob from the pilot to the main burner position will allow manual cycling of the burners 'On' and 'Off' when melting shortening.

3.2 Explanation of Control System - GT45/GT60 (Single tank fryers)

The gas control circuit in these fryers is operated by three millivolt circuits.

The first two circuits are the pilot system which consist of two thermocouples, the pilot burners, the gas control and a second flame failure valve separate from the gas control.

The thermocouple from the right pilot is connected to the main gas control valve, while the other thermocouple is connected to a separate flame failure valve downstream from the gas control pilot gas line. Heat on the thermocouples from the pilot flames generates a 20-30 mV electrical potential between each thermocouple and earth. These millivolt circuits connected to the gas control valve and flame failure valve are enough to hold the gas valve magnets within the gas controls open, thereby allowing the pilot burners to operate.

The third millivolt circuit consists of the thermopile (a collection of thermocouple connections in series), and the gas control. Heat on the thermopile from the pilot flame which is constantly on as explained above, generates approximately 500-700 millivolts which, when connected to the main burner valve magnet within the gas control, allows the magnet to pull open the main burner valve therefore allowing gas to pass through to the burners.

This main valve circuit is interrupted by the main thermostat and as the thermostat cycles on/off, it closes or opens this millivolt circuit, thereby opening and closing the main burner valve to cycle the main burners on/off.

The over-temperature thermostat is included in the pilot millivolt circuit in this same way so that when it open circuits it cuts the electrical supply to the main gas valve magnet, thereby shutting off the pilot burner. The fryer then becomes inoperable until the oil cools to below 200°C, at which point the over-temperature thermostat will close again and allow the millivolt circuit to be complete, thereby allowing the pilot burner to be lit again.

The troubleshooting Guide section 5 should be used to identify any incorrect fryer operation. On correct identification of the fault, the Troubleshooting Guide will make reference to the corrective action required, or refer to the Fault Diagnosis section and/or Service section to assist in correction of the fault.

3.3 Explanation of Control System - GT46 (Twin tank fryers)

The gas control circuit in these fryers is operated by two millivolt circuits.

The first is the pilot system which consists of the thermocouple, the pilot burner and the gas control.

Heat on the thermocouple from the pilot flame generates a 20-30 mV electrical potential between the thermocouple and earth. This millivolt circuit connected to the gas control valve is enough to hold the pilot valve magnet within the gas control open, thereby allowing the pilot burner to operate.

The second millivolt circuit consists of the thermopile (a collection of thermocouple connections in series), and the gas control. Heat on the thermopile from the pilot flame which is constantly on as explained above, generates approximately 500-700 millivolts which, when connected to the main burner valve magnet within the gas control, allows the magnet to pull open the main burner valve therefore allowing gas to pass through to the burners.

This main valve circuit is interrupted by the main thermostat and as the thermostat cycles on/off, it closes or opens this millivolt circuit, thereby opening and closing the main burner valve to cycle the main burners on/off.

The over-temperature thermostat is included in the pilot valve millivolt circuit in this same way so that when it open circuits it cuts the electrical supply to the pilot valve magnet, thereby shutting off the pilot burner. The fryer then becomes inoperable until the oil cools to below 200°C, at which point the over-temperature thermostat will close again and allow the millivolt circuit to be complete, thereby allowing the pilot burner to be lit again.

The troubleshooting Guide section 5 should be used to identify any incorrect fryer operation. On correct identification of the fault, the Troubleshooting Guide will make reference to the corrective action required, or refer to the Fault Diagnosis section and/or Service section to assist in correction of the fault.

CAUTION:

Always turn off the gas supply before cleaning.

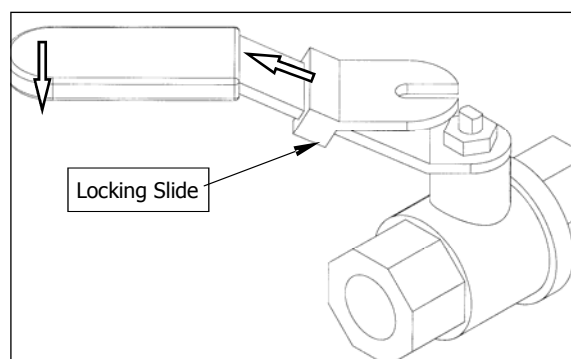
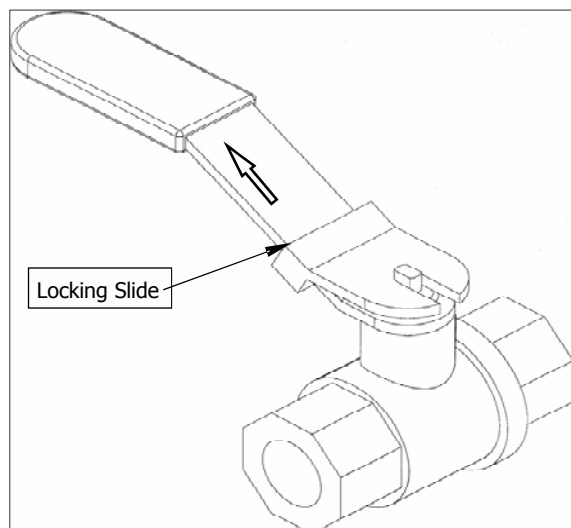
**This unit is not water proof.
Do not use water jet spray to clean
interior or exterior of this unit.**

General

- To achieve the best results, cleaning must be thorough, and all controls and mechanical parts checked and adjusted periodically by a competent serviceman. If any small faults occur, have them attended to promptly.
- Don't wait until they cause a complete breakdown.

Draining and Cleaning**Opening the Drain Valve**

- Lift the locking slide on valve handle to release valve.
- While holding the locking slide in the withdrawn position, rotate the handle anticlockwise to open the valve.
- When the valve is closed, the locking slide will drop down over the locking valve to prevent accidental opening of the valve.

**Daily Cleaning**

- At the end of each day or at the end of each shift, if the frying schedule is heavy, the frying medium should be drained and strained into a receptacle.
- Use a drain stick, if necessary, to stir up any solid medium into the top medium to melt it. Slip a muslin or other suitable bag over the drain valve. Crumbs will be caught in the bag but frying medium will strain freely through bag into the receptacle. When the tank is empty, use a small tank with a handle as a ladle and dip into the hot frying medium from receptacle and pour vigorously around sides and bottom of the tank to wash out crumbs and particles adhering to them. Continue to dip and pour until all crumbs are washed down and into the filter bag.
- Open the drain valve fully and check for any particles or crumb residue lodged in the valve. Clean out with a stiff nylon brush. Do not use wire brush or metal rods as these damage the seating in the valve and will eventually lead to valve leakage.
- If the obstruction in the valve cannot be removed with a brush, use a wooden probe to dislodge any obstruction.
- Once the daily cleaning operation is completed, close the valve and pour the frying medium back into the tank and continue the days work. Straining takes less time than frying one load of potatoes and will pay dividends in food quality and saving of frying medium.

Weekly Cleaning

- a. Proceed as for "Daily Cleaning" to drain and filter the tank. Do not refill the tank with frying medium until it has been cleaned as shown below.
- b. Fill the fryer with cold water to the normal fill level and add a high quality commercial cleaner that has been specifically formulated for fryers. All purpose cleaners are not recommended

NOTE:

Never use a caustic or lye solution, as this will leave a fat destroying film on the tank.

- c. Heat the water to approximately 80-90°C.
- d. Clean the fryer baskets at the same time by simply immersing them in the cleaning solution. Allow the fryer to soak for 5-10 minutes or as directed on the cleaner instructions. Remove the baskets and turn OFF the main burners.
- e. Scrub the baskets and fryer tank lightly, but vigorously with a stiff nylon bristle brush to remove any remaining deposits. **DO NOT use a wire brush, as this will scratch the sides**
- f. Empty the fryer and rinse thoroughly with water. Use a 1 part vinegar to 15 parts water solution to rinse the tank and neutralise any cleaner residue. Use a weaker solution of up to 1 part to 25 water if this proves unsuitable for the cleaner being used.
- g. Rinse the tank thoroughly with water, drain and dry. Refill the tank with new filtered frying medium.



WARNING:

ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

5.1 Trouble shooting chart

Fault	Possible Cause	Remedy
Piezo ignitor not sparking	Short in high tension lead. (Refer fault diagnosis 5.2.2)	Replace lead. (Refer service section 6.2.14)
	Piezo faulty. (Refer fault diagnosis 5.2.2)	Replace piezo. (Refer service section 6.3.12)
Pilot won't light	No gas supply	Ensure gas is connected and on and bottles not empty.
	Gas pressure too low.	Check gas supply pressure. (Refer specifications section)
	Knob on gas control won't go fully in.	Remove obstruction. Correct control / wrapper mounting.
		Replace gas control. (Refer service section 6.3.10/6.2.11)
	Flame failure valve pilot button won't go fully in. (GT45 and GT60)	Replace flame failure valve. (Refer to section 6.2.15)
	Blocked pilot spud.	Clean or replace pilot spud. (Refer service section 6.2.3)
Pilot goes out when knob released	Releasing knob before the thermocouple heated.	Hold control in for longer (10 s), see if pilot will stay lit.
	Pilot flame too small. (Refer fault: Pilot Flame small)	Correct fault.
	Thermocouple faulty. (Refer fault diagnosis 5.2.1)	Replace thermocouple. (Refer service section 6.2.1)
	Over-temperature thermostat faulty. (Refer fault diagnosis 5.2.1)	Replace over-temperature thermostat. (Refer service section 6.2.9)
	Gas control valve faulty	Replace gas control magnet
	Flame failure valve faulty (GT45 and GT60 only)	Replace flame failure magnet
Pilot flame small	Gas pressure too low.	Check gas supply pressure. (Refer specifications section)
	Pilot adjustment screw out of adjustment.	Adjust pilot adjustment screw. (Refer service section 6.3.1)
	Pilot injector restricted.	Clean pilot injector. (Refer service section 6.2.3)

Fault	Possible Cause	Remedy
Pilot goes out when main burner comes on	Incorrect gas pressure. Faulty gas control.	Check supply / adjust pressure. (Refer specifications section) Replace gas control. (Refer service section 6.2.10/6.2.11)
Pilot goes out while frying, won't re-light	Over-temperature thermostat faulty (oil below 205°C/401°F). (Refer fault diagnosis 5.2.1) Thermostat out of calibration (oil over 205°C/401°F).	Replace over-temperature thermostat. (Refer service section 6.2.5) Recalibrate thermostat. (Refer service section 6.3.2)
Pilot goes out while frying, can re-light	Gas supply - incorrect or fluctuating pressure. Draught at installation (blowing pilot out). Thermocouple faulty. (Refer fault diagnosis 5.2.1) Over-temp thermostat faulty. (Refer fault diagnosis 5.2.1) Main gas control valve faulty. Flame failure valve faulty (GT45 and GT60 only)	Check supply / adjust pressure. Shield fryer from excessive breeze Replace thermocouple. (Refer service section 6.2.1/6.2.2) Replace. (Refer service section 6.2.5) Replace gas control magnet. Replace flame failure magnet.
Main burners will not light	Incorrect supply pressure. Wrong size or blocked injectors. Small pilot flame. (Refer fault:Small Pilot Flame) Faulty thermopile. (Refer fault diagnosis 5.2.3) Faulty thermostat. (Refer fault diagnosis 5.2.3) Faulty gas control. (Refer fault diagnosis 5.2.3)	Check supply correct pressure. Replace / clean injectors. (Refer service section 6.2.7) Correct fault. Replace thermopile. (Refer service section 6.2.1/6.2.2) Replace thermostat (Refer service section 6.2.5) Replace gas control. (Refer service section 6.2.10 /6.2.11)

Fault	Possible Cause	Remedy
Pilot flame yellow / lazy	Gas pressure incorrect. Restriction in pilot spud or aeration.	Check gas supply pressure. (Refer specifications section) Clean or replace as required. (Refer service section 6.2.3)
Burners do not burn correctly (roar / light back / incorrect colour)	Incorrect supply pressure. Pilot too small or too large. Incorrect injector sizes. Burner faulty.	Check supply pressure. Adjust pilot size. (Refer service section 6.2.3) Check injector sizes and replace if necessary. (Refer service section 6.3.4) Replace burner. (Refer section 6.2.8)
Set temperature not reached	Gas supply fluctuating. Thermopile faulty. (Refer fault diagnosis 5.2.3) Small pilot flame. (Refer fault:Small pilot flame) Gas control faulty. Thermostat out of calibration. Placing food into oil too soon. Too large a load	Supply correct pressure. Replace thermopile. (refer service section 6.2.6) Correct fault. Replace gas control. (Refer service section 6.2.10/6.2.11) Recalibrate thermostat. (Refer service section 6.3.2) Give the fryer more time to come up to temperature before inserting food. Reduced load size will allow the fryer to recover temperature quicker.
Oil too hot	Thermostat out of calibration	Recalibrate thermostat. (Refer service section 6.3.2)

5.2 Fault Diagnosis

5.2.1 Pilot drops out

Pilot flame too small

If pilot can be lit but the flame is too small to impinge on the thermocouple, then check the gas pressure. If ok, check the adjustment of pilot flow by adjusting screw below control Knob on gas control. If sufficient pilot flame cannot be obtained, remove the pilot injector from the pilot burner and check for blockages and correct size

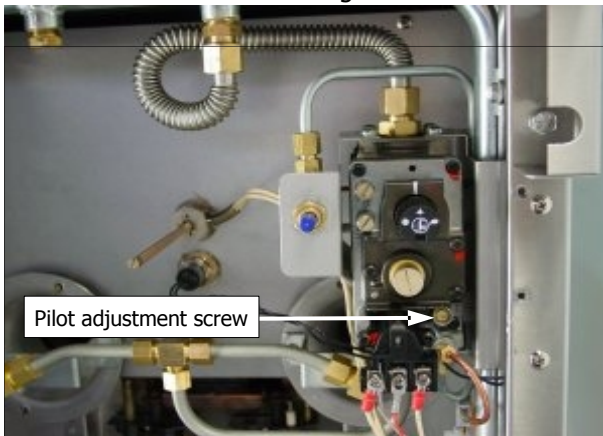


Figure 5.2.1a

Thermocouple faulty (GT45 and GT60 Only)

Check thermocouple connections are firm and the over-temperature lead connection to interrupter block on the thermocouple is secure (loose connections will cause resistance in millivolt circuit and result in pilot outage).

If all connections are OK, then light the pilots. Hold in both control buttons and ignite flames, wait 10 seconds then release the blue pilot button only. If the pilot flames go out after releasing the blue button then there is a problem with the thermocouple circuit connected to the flame failure valve.

If the pilot flames don't go out when the blue pilot button is released then release the main control button. If the pilot flames go out when the main control is released then there is a problem with the thermocouple circuit connected to the main gas control.

To test the thermocouple connected to the flame failure valve, disconnect the thermocouple from the rear of the flame failure valve. Ignite the pilots, and while still holding the flame failure blue pilot button in measure the voltage between the removed end of the thermocouple and earth. The reading should be approximately 30mV. If the reading is less than 10mV and there is satisfactory flame impingement on the thermo-

couple the thermocouple is faulty—replace.

If the voltage is over 10mV then there is a fault with the flame failure valve electromagnet—replace.

To test the thermocouple connected to the main gas control, ignite the pilots and whilst holding in the gas control button, measure the voltage between the pilot burner side of the connector block to earth. This should be approximately 30mV. If the reading is below 20mV and there is satisfactory flame impingement on the thermocouple then the thermocouple is faulty—replace. If the voltage is over 15mV refer to "Over-temp tripped or faulty".

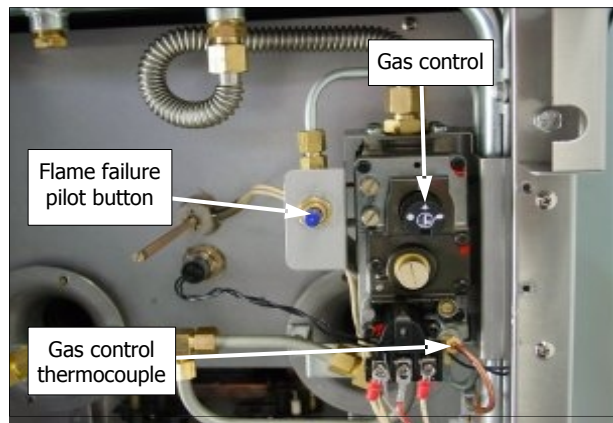


Figure 5.2.1b

Thermocouple faulty (GT46 only)

Check the thermocouple connection is firm and the over-temp lead connection to the interrupter block on the thermocouple is secure. (Loose connections will cause resistance in millivolt circuit and result in pilot outage).

If all connections OK, then light the pilot, and whilst holding the control knob in, measure the voltage from the pilot side of the connector block to earth (e.g. the body of the solenoid). This should read approximately 30mV. If this reading is less than 15mV refer to "Over-temp tripped or faulty" section.

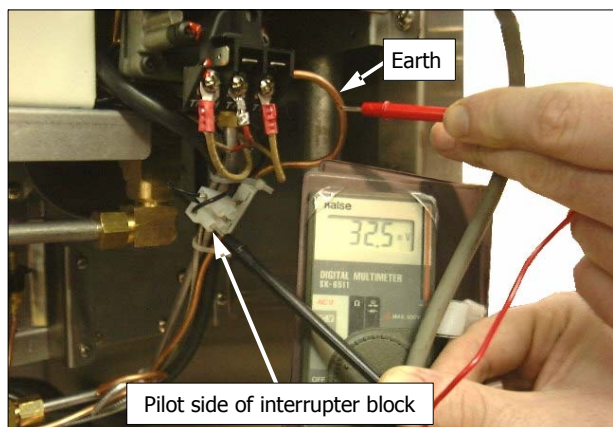


Figure 5.2.1c

Overtemp tripped

Check the oil temp with the thermometer. If the oil temperature has reached over 220 °C the overtemp should have tripped (open circuit), and will not reset until the temperature has dropped below 192 °C. If the oil temperature is below 180°C and the overtemp is still open circuit then the overtemp is faulty.

Overtemp faulty

To check if the overtemp is faulty hold in the gas control button and light the pilots (leaving the control button depressed to keep the pilot alight). With a multimeter measure the voltage from the gas control side of the thermocouple interrupter block to earth. If the voltage is under 5mV (and the thermocouple is generating at least 20mV) then the overtemp is faulty—replace. If all of the above checks out ok then check gas control or thermocouple.

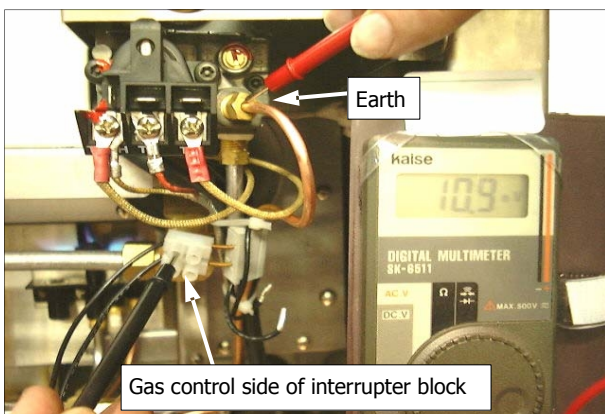


Figure 5.2.1d

5.2.2 Piezo ignitor not sparking

Short in high tension lead

If repeated sparking of the piezo shows only intermittent sparking at the electrode, then the lead should be traced to find area of short. This can be visually seen as the spark arks. If the lead is shorting the best solution is to replace it, as the electrical insulation of the lead may have deteriorated.

If the spark arc can be seen at the electrode insulator at the pilot burner instead of at the electrode tip, then the insulator probably has a fracture and should be replaced

Piezo ignitor faulty

If no spark at all can be generated, remove piezo ignitor and hold close to cabinet body . Depress piezo ignitor and if a spark cannot be generated to the cabinet body the piezo ignitor is faulty and should be replaced.

Note: If piezo ignition fails, the pilots can be manually lit in the interim until the piezo circuit is repaired. A standard taper torch ,lighter or matches can be used for manual back-up ignition.

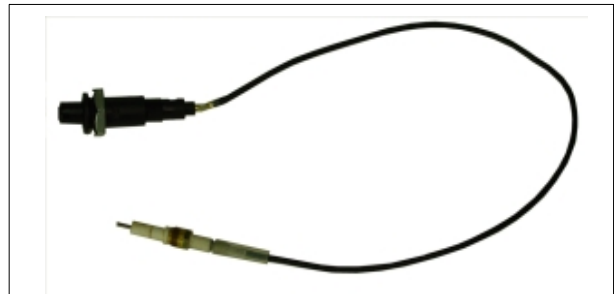


Figure 5.2.2

5.2.3 Main burners will not light

Thermopile faulty

Check locations of thermopile and thermostat are correct and are tight and secure.

Set gas control to pilot flame setting and remove thermostat connection from the right hand connection screw (marked TH). Measure the mV generated by the thermopile by placing multimeter probes on the gas control connections. A good thermopile with correct flame impingement should generate between 450-700mV. If under 300mV thermopile is faulty—replace.



Figure 5.2.3a

Thermostat or Gas control faulty

With cold fryer, disconnect thermostat wires from gas control and check continuity through thermostat. If no continuity rotate shaft anti-clockwise one full turn to check if the thermostat is out of calibration. If there is still no continuity then replace the thermostat.



Figure 5.2.3b

If there is continuity through the thermostat connection then set gas control knob to main flame position. Check millivolts generated by the thermopile across terminals TP and TH (middle and RH connection). A minimum of 150mV is required to hold gas valve open. If a greater value than this is obtained but the main burner will not come on then the gas valve is faulty—replace. If less than 150mV is obtained (and the thermopile is ok—refer earlier section) then the thermostat is faulty—replace.

Section	Page Number
6.1 Access.....	22
6.1.1 Control Panel.....	22
6.2 Replacement.....	22
6.2.1 Thermocouple (Gas Control).....	22
6.2.2 Thermocouple (Flame Failure Valve - Single Tank Models).....	23
6.2.3 Pilot Injector.....	23
6.2.4 Pilot Burner.....	23
6.2.5 Over-temperature Safety Thermostat.....	23
6.2.6 Thermostat.....	24
6.2.7 Main Burner Injector.....	24
6.2.8 Main Burner.....	24
6.2.9 Thermostat.....	25
6.2.10 Gas Control Valve (Single Tank Models).....	26
6.2.11 Gas Control Valve (Twin Tank Models).....	26
6.2.12 Piezo Ignitor.....	27
6.2.13 Piezo Ignition Electrode.....	27
6.2.14 High Tension Lead.....	27
6.2.15 Flame Failure Valve.....	27
6.3 Adjustment / Calibration.....	28
6.3.1 Pilot Flame Adjustment.....	28
6.3.2 Thermostat Calibration.....	28
6.3.3 Operating Pressure.....	28

**WARNING:**

ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

ENSURE GAS SUPPLY IS SWITCHED OFF BEFORE SERVICING

ALWAYS CHECK / TEST FOR GAS LEAKS AFTER SERVICE REPAIRS ON THE GAS SYSTEM

6.1 Access

6.1.1 Control panel

- 1) Remove two screws from the underside of fascia panel. Panel should now drop down and be removed.



Figure 6.1.1a

- 2) Remove thermostat control knob (2 slot screws or 2 socket head screws).

Note: Note position of knob, so that it can be returned to the same position when reassembling.



Figure 6.1.1b

- 3) Remove four screws securing control panel to fryer. Control panel can now be removed.

6.2 Replacement

6.2.1 Thermocouple (gas control)

- 1) Disconnect thermocouple from gas control.

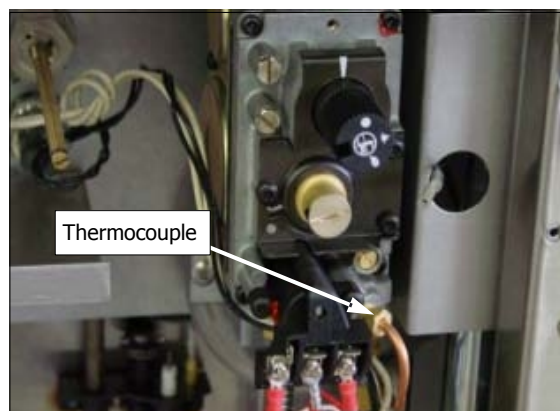


Figure 6.2.1a

- 2) Unscrew the overtemp thermostat wires from the connector block on the thermocouple.
- 3) Unscrew thermocouple securing nut from pilot burner.

Note: It may be necessary to remove the piezo ignition electrode from the pilot

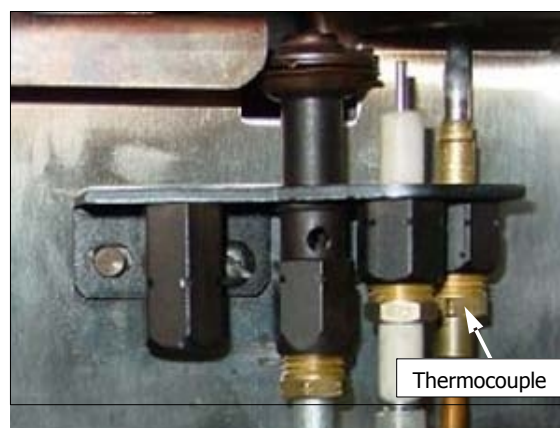


Figure 6.2.1b

- assembly before removing thermocouple.
- 4) Replace thermocouple and reconnect.
When screwing thermocouple back into gas control, once thread has tightened up tighten another 1/4 turn only. Do not over tighten.

6.2.2 Thermocouple (flame failure valve - single tank models)

- 1) Remove front panel.
- 2) Disconnect thermocouple from flame failure valve.



Figure 6.2.2

- 3) Unscrew thermocouple securing nut from pilot burner.
- 4) Replace thermocouple and reconnect.
When screwing thermocouple back into gas control, once thread has tightened up tighten another ¼ turn only. Do not over tighten.

6.2.3 Pilot injector

- 1) Remove ignition electrode (if fitted)
- 2) Disconnect pilot supply tube from pilot burner and tee by unscrewing nuts and olive.

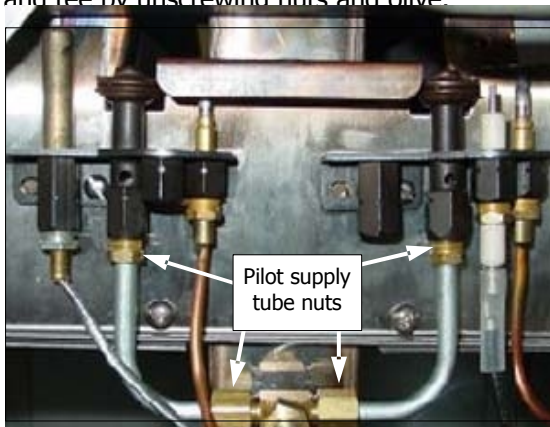


Figure 6.2.3

- 3) Remove pilot injector, and clean or replace as necessary.
Note: Ensure correct size injector is used (refer specifications section).
- 4) Reassemble in reverse order.

6.2.4 Pilot burner

- 1) Disconnect the thermopile and/or the thermocouple and/or the piezo electrode from the pilot burner.
- 2) Disconnect pilot supply tube from pilot burner by unscrewing nut and olive.



Figure 6.2.4

- 3) Remove screw securing the pilot burner to front of the fryer, and remove pilot burner assembly.
- 4) Replace pilot burner and reassemble. Ensure correct pilot injector is refitted (refer to the specifications section).

6.2.5 Over-temperature safety thermostat

- 1) Drain oil from fryer.
- 2) Remove control panel (refer 6.2.1)
- 3) Disconnect overtemp leads from interrupter on the thermocouple.

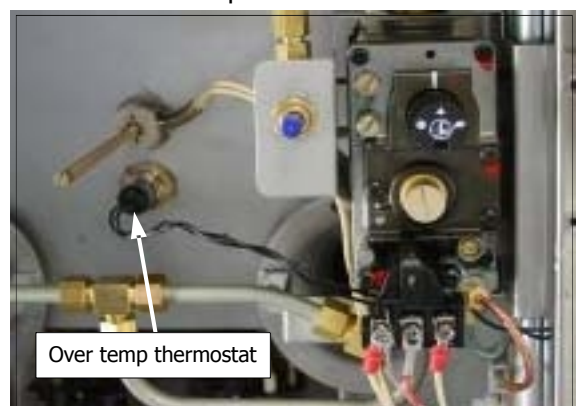


Figure 6.2.5

- 4) Using 7/8" spanner, remove the overtemp thermostat from fryer tank.
- 5) Replace and reassemble in reverse order, using sealant suitable for 250 °C on threads (loctite 567 recommended).

6.2.6 Thermopile

- 1) Unscrew the two thermopile leads from the gas control terminal block.



Figure 6.2.6a

- 2) Unscrew the thermopile securing nut from the pilot burner and remove the thermopile.
- 3) Replace thermopile and reconnect.

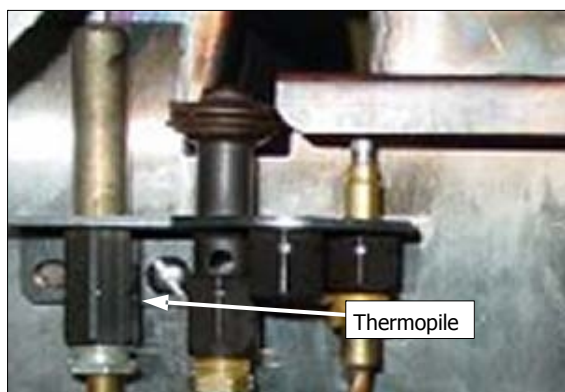


Figure 6.2.6b

6.2.7 Main injector

- 1) Unscrew each injector out of injector mounts.
- 2) Remove injector, and clean or replace as necessary. Ensure correct size of injectors are refitted (refer specifications section)

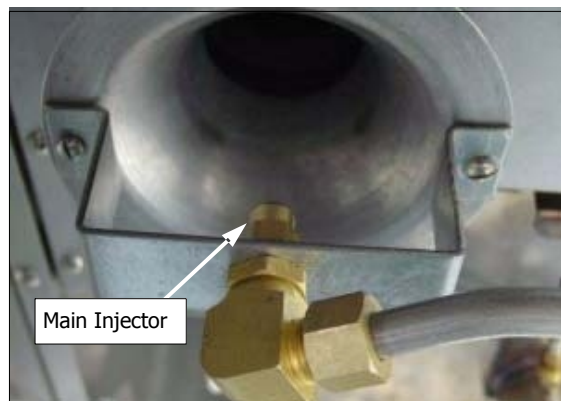


Figure 6.2.7

6.2.8 Main burners

- 1) Unscrew 2 screws from pilot mounting bracket from side from which burner is to be replaced.
- 2) Unscrew (2 screws) burner box underside panel from side from which burner is to be replaced.
- 3) Unscrew and remove corner support panel from underside of burner intake throat (2 screws)

NOTE: There may be a tie wire located at the rear of the burner. This can be cut with a pair of cutters, and discard.

Burner can be removed by dropping down front of burner and pulling forward.

- 4) With the burner out, the tank underside should be checked to ensure that the black emissivity coating is still intact. There should be no shiny stainless steel of the tank exposed, or white substance if required and remove any loose coating.

NOTE: If touch up or recoat is required, use a spray can of **matt black high temperature enamel** (VHT1200 or equivalent) to re-coat the affected area.

- 5) Holding the new burner with one hand underside and the other holding the throat, push up the rear of the burner until it positions on the rear support bracket within the burner box. It is a good practice to put your head down and have a look at this bracket before trying too install a burner so that you can visualise where the bracket is when fitting the burner.

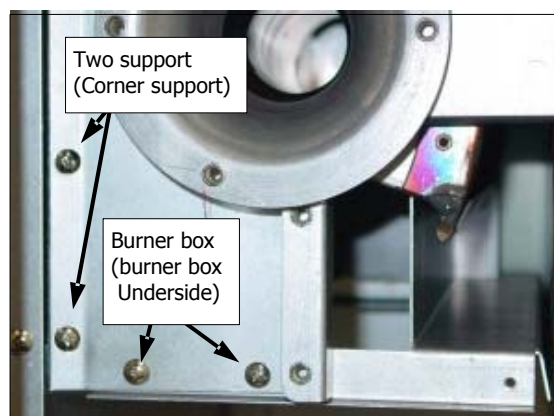


Figure 6.2.8a

- 6) Once the rear is supported the front can be pushed up into its location. The small notch in each side of the venturi visible externally from the burner body is for the front to back location and should be located up into the top corner panels when pushing up at the burner at front. If correctly fitted the corner support bracket securing holes. If not, check burner fit.
- 7) Replace brackets and all connections to the gas controls
- 8) Ensure underside burner box panel is refitted, as failure to refit this panel will reduce combustion and performance efficiency

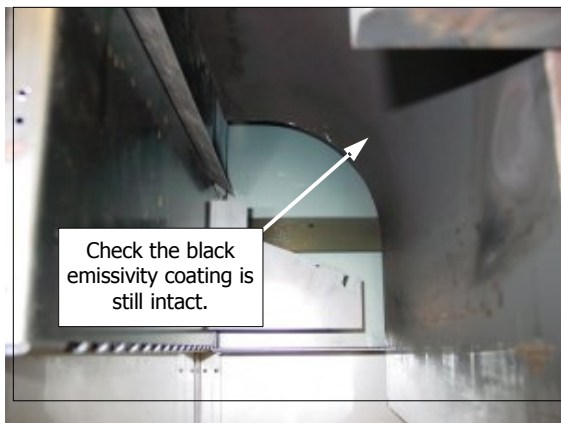


Figure 6.2.8b

6.2.9 Thermostat

- 1) Drain oil from fryer.
- 2) Remove control panel (refer 6.1.1).
- 3) Remove the overtemp thermostat (refer 6.3.4)
- 4) Disconnect thermostat leads from gas control terminal block.

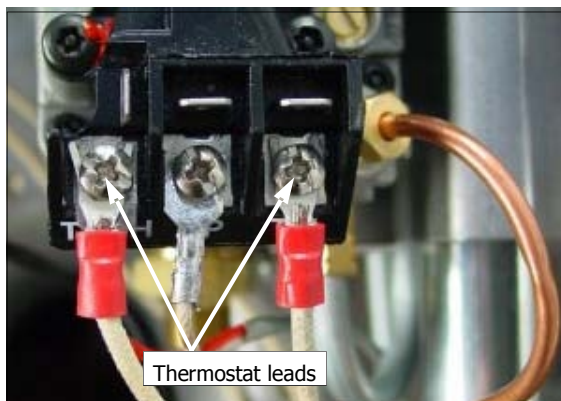


Figure 6.2.9a

- 5) Unscrew thermostat. Replace with new thermostat ensuring sealant suitable for 250 °C is used on threads (Loctite 567 recommended). Avoid rotating shaft on thermostat as internal damage may occur.

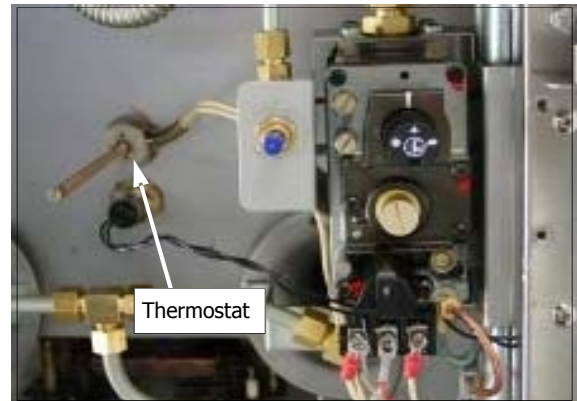


Figure 6.2.9b

! IMPORTANT:

DO NOT OVER-TIGHTEN THERMOSTAT OR INTERNAL DAMAGE MAY OCCUR. IT IS RECOMMENDED THAT A MAXIMUM TORQUE OF 47.5 Nm (35ftlb) IS APPLIED TO TIGHTEN.

- 6) Refit overtemp thermostat with the thread connection being resealed. Re-assemble by reversing the above procedure.

Ensure thermostat , overtemp, and H.T. leads are not pinched when refitting control panel. To calibrate thermostat refer 6.3.2.

Note: On twin tank models both thermostat knobs will need to be removed.

6.2.10 Gas control (Single tank models)

Note: Ensure gas is isolated at main supply before any alterations are carried out on main gas controls.

- 1) Remove control panel (refer 6.1.1).
- 2) Disconnect thermocouples, thermopile and thermostat leads, and pilot supply from gas flame failure valve.
- 3) Undo gas supply line located on top of gas control.
- 4) Undo main injector supply located at the bottom of the gas control.

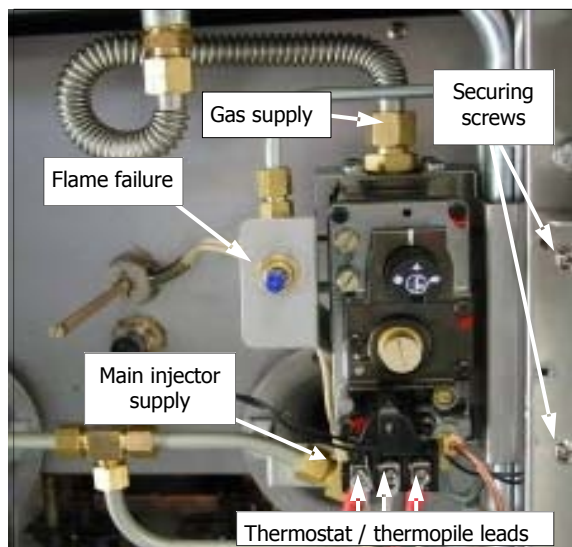


Figure 6.2.10

- 5) Remove two securing screws on the front side of the panel and remove gas control.
- 6) With gas control on bench remove the flame failure valve and pilot line that is connected to the gas control.
- 7) Refit by reversing the above procedure.

Note: Ensure gas thread connections are re-sealed and electrical connections secured when servicing.

- 8) Adjust pressure and pilot size as per 6.3.1 and 6.3.3.

6.2.11 Gas control (Twin tank models)

Note: Ensure gas is isolated at main supply before any alterations are carried out on main gas controls.

- 1) Remove control panel (refer 6.1.1).
- 2) Disconnect thermocouples, thermopile and thermostat leads, and pilot supply from gas control(s).
- 3) Undo main injector supply line at bottom of gas control then undo gas control supply pipe from the top of the unit. Main gas control assembly can now be removed after removing 2 securing screws fixing assembly to side panel inner flanges.



Figure 6.2.11

- 4) Replace gas control in assembly.
- 5) Refit by reversing above procedure.

Note: Ensure gas thread connections are re-sealed and electrical connections secured when servicing.

- 6) Adjust pressure and pilot size as per 6.3.1 and 6.3.3.

6.2.12 Piezo ignitor

- 1) Remove control panel (refer 6.1.1).
- 2) Remove piezo ignitor and replace.

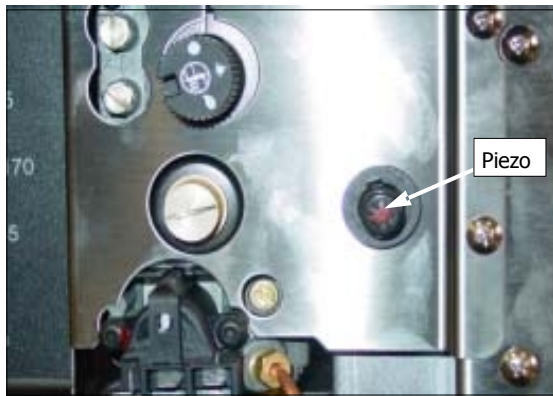


Figure 6.2.12

6.2.13 Piezo Electrode

- 1) Remove nut securing piezo electrode to pilot assembly.
- 2) Remove piezo electrode and replace.

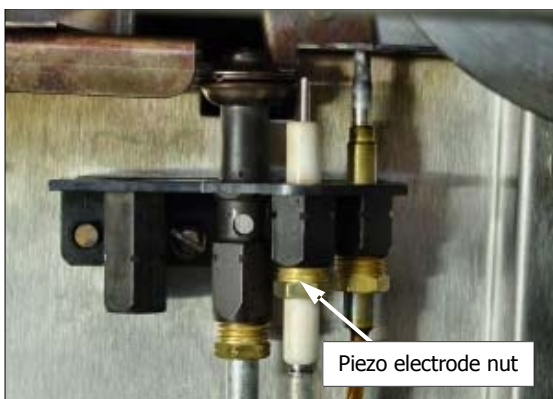


Figure 6.2.13

6.2.14 High tension lead

- 1) Remove control panel (refer 6.1.1) and remove HT lead from piezo ignitor.
- 2) Remove HT lead from piezo electrode, replace and reassemble in reverse order.

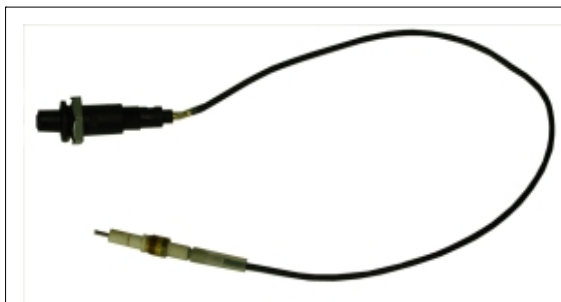
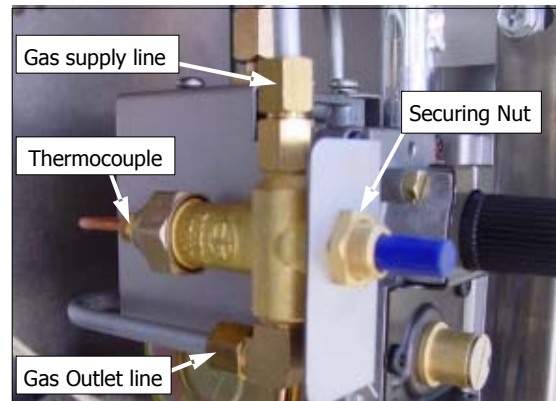


Figure 6.2.14

6.2.15 Flame failure valve

- 1) Remove control panel (refer 6.1.1)
- 2) Remove thermocouple, gas inlet and outlet pipes.
- 3) Undo bracket securing nut.



- 4) Remove flame failure valve.
- 5) Replace and reassemble in reverse order.

Note: When screwing thermocouple back into gas control, once thread has tightened up tighten another 1/4 turn only. Do not over tighten.

6.3 Adjustment / Calibration

6.3.1 Pilot adjustment

- 1) Open door, and using screwdriver turn the pilot adjustment screw.
Turning the screw anticlockwise increases the pilot flow.
Turning the screw clockwise decreases the pilot flow.

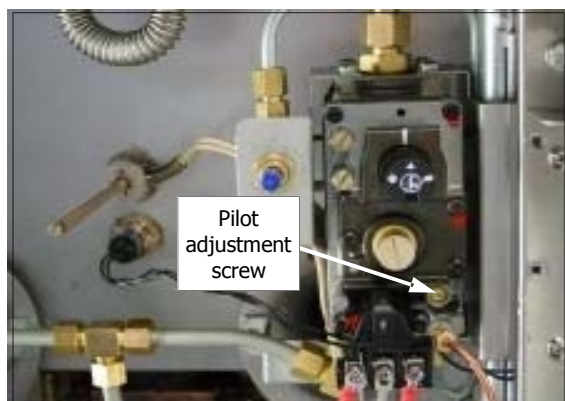


Figure 6.3.1

6.3.2 Thermostat calibration

- 1) Remove thermostat control knob (two screws).
- 2) Fill fryer with oil. Light pilot burners and turn on burners. With temperature probe in oil, run burners until oil temperature reaches over 150°C. If it is a replacement thermostat rotate the shaft a maximum of one full turn anticlockwise and allow fryer to heat the oil. When the burner has cycled off, turn shaft again (max 1 full turn) until 150-200°C range is reached.
- 3) Turn thermostat shaft until cycling on/off point reached. Check oil temperature and find point at which rotating shaft back and forth slightly will cause burners to cycle on/off.
- 4) Recheck oil temperature (should be between 150°C and 190°C) and refit control knob with pointer at temperature setting on control panel that reflects actual oil temperature. Allow fryer to cycle and make any fine adjustments of knob position if required.

6.3.3 Operating pressure

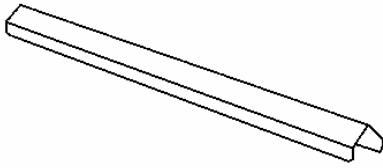
- 1) Unscrew operating pressure test point on the gas control valve.
- 2) Fit manometer (pressure meter) to test point.
- 3) Light main burners.
- 4) Remove regulator cap.
- 5) Adjust operating pressure by turning regulator screw until correct operating pressure is achieved.

NAT gas: 1.0 kPa

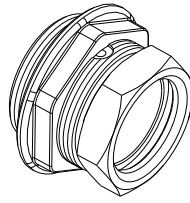


Figure 6.3.3

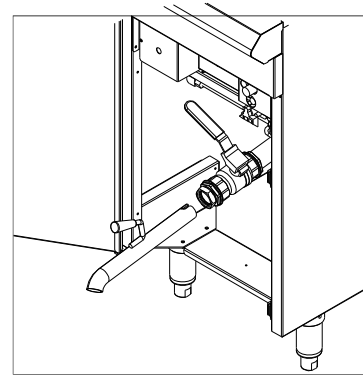
Joining strip
(Part no. 228600)



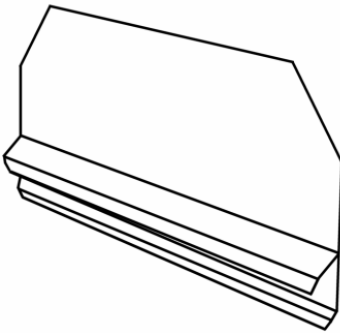
Drain adaptor
(Part no. 024705)



Drain extension kit
(Part no. 024710)



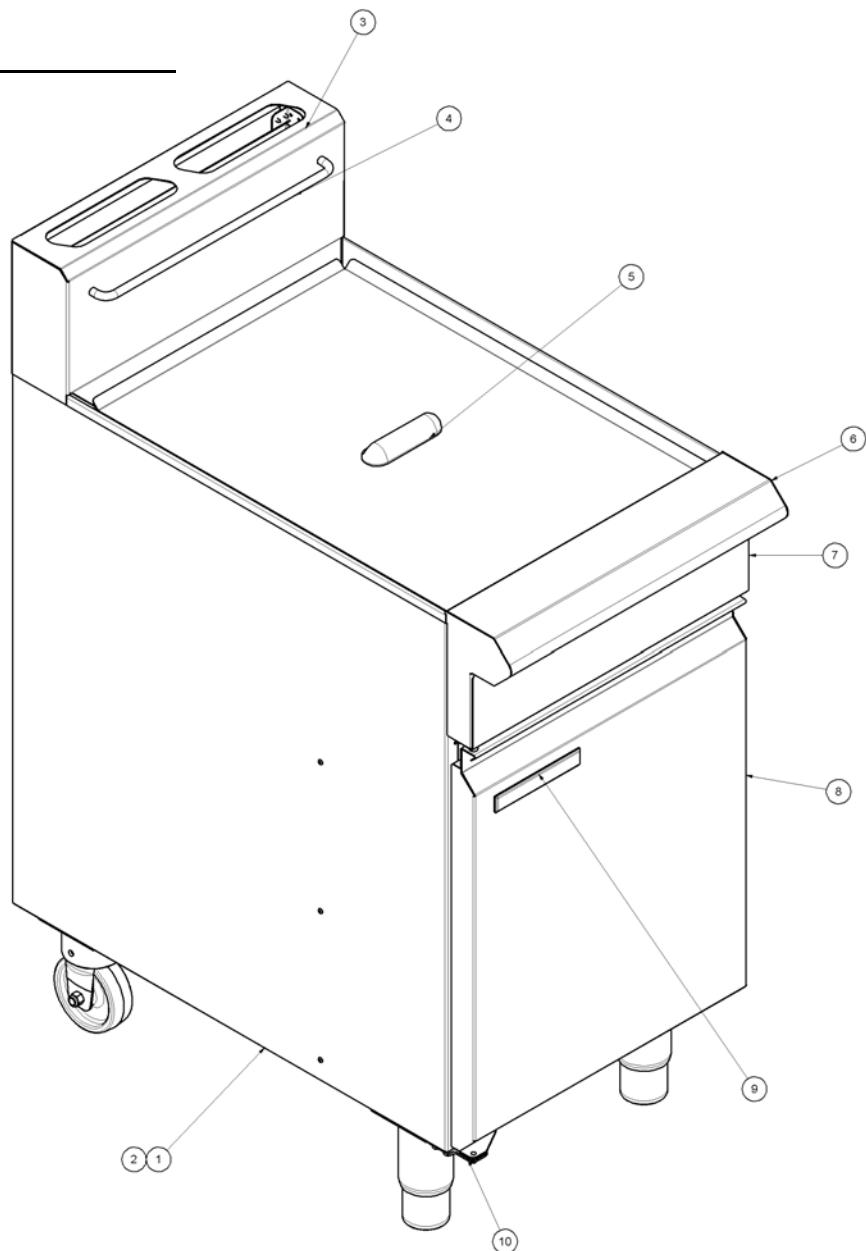
Side splash panel
LH (Part no. 228898)
RH (Part no. 228899)



Side splash panel joiner
for griddle - chargrill
LH (Part no. 228894)
RH (Part no. 228895)

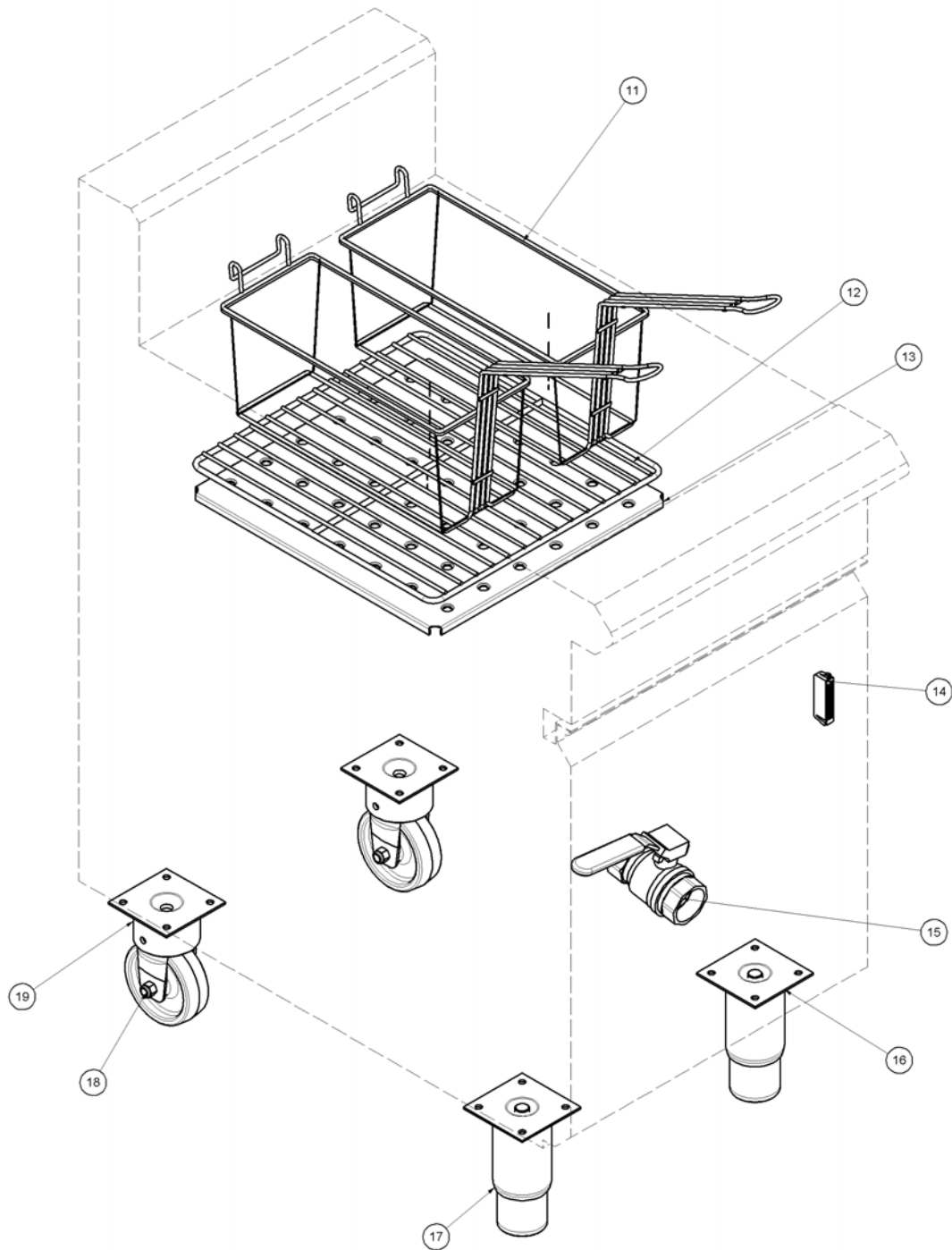
8.1 GT45

8.1.1 GT45 Main Assembly



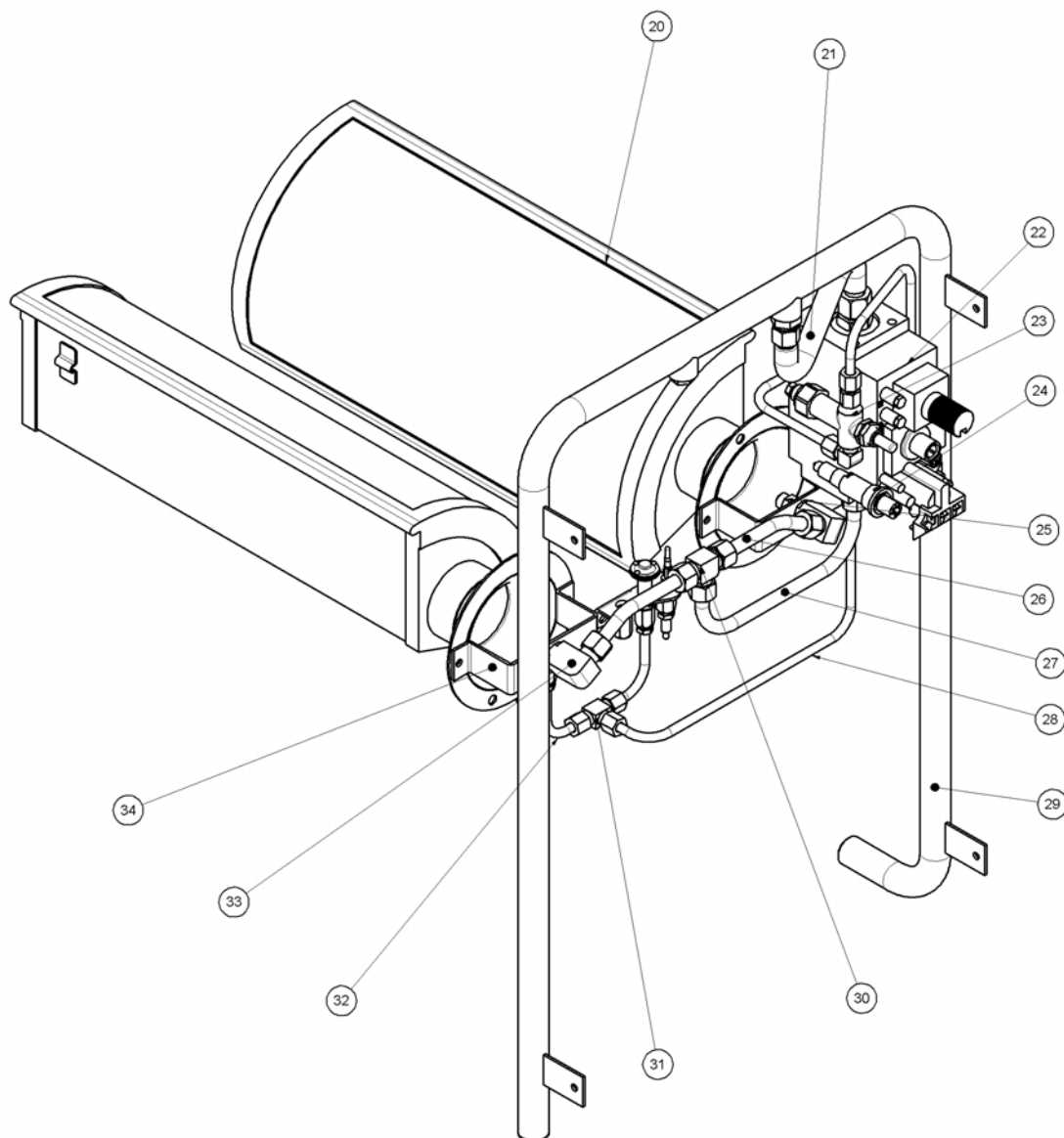
ITEM	PART NO	DESCRIPTION
1	227511	FRYER SIDE PANEL RH
2	227512	FRYER SIDE PANEL LH
3	228770	SPLASHBACK 450 BS
4	227441	BASKET HANGER 370mm
5	228761	LID 450 FRYER
6	227762	HOB FRONT WA BSEAL
7	227696	CONTROL PANEL GT45/46
8	230422	FRYER DOOR ASSEMBLY (NO BADGE)
	227449	DOOR HANDLE
	228846	DOOR OUTER
	227453	DOOR INNER
	227466	FRYER CATCH RECEIVER
	228132	TUBE CLIP
	228308	HINGE PIVOT WA
9	227960	BADGE BLUESEAL
10	228300	HINGE PLATE
	228301	HINGE BUSH

8.1.2 GT45 Main Assembly



ITEM	PART NO	DESCRIPTION
11	018019	FRYER BASKET -STANDARD
12	228576	BASKET TRAY 450mm 1 PAN GAS
13	228127	FISH PLATE GT45
14	227856	MAGNETIC CATCH 02-10-201-10
15	018358	BALL VALVE
16	227852	LEG PLATE
17	227850	LEG 150mm (FLUSH STUD)
18	229674	REAR ROLLER ASSY
19	229671	LEG RING PLATE THREADED

8.1.3 GT45 Main Burners



ITEM PART NO

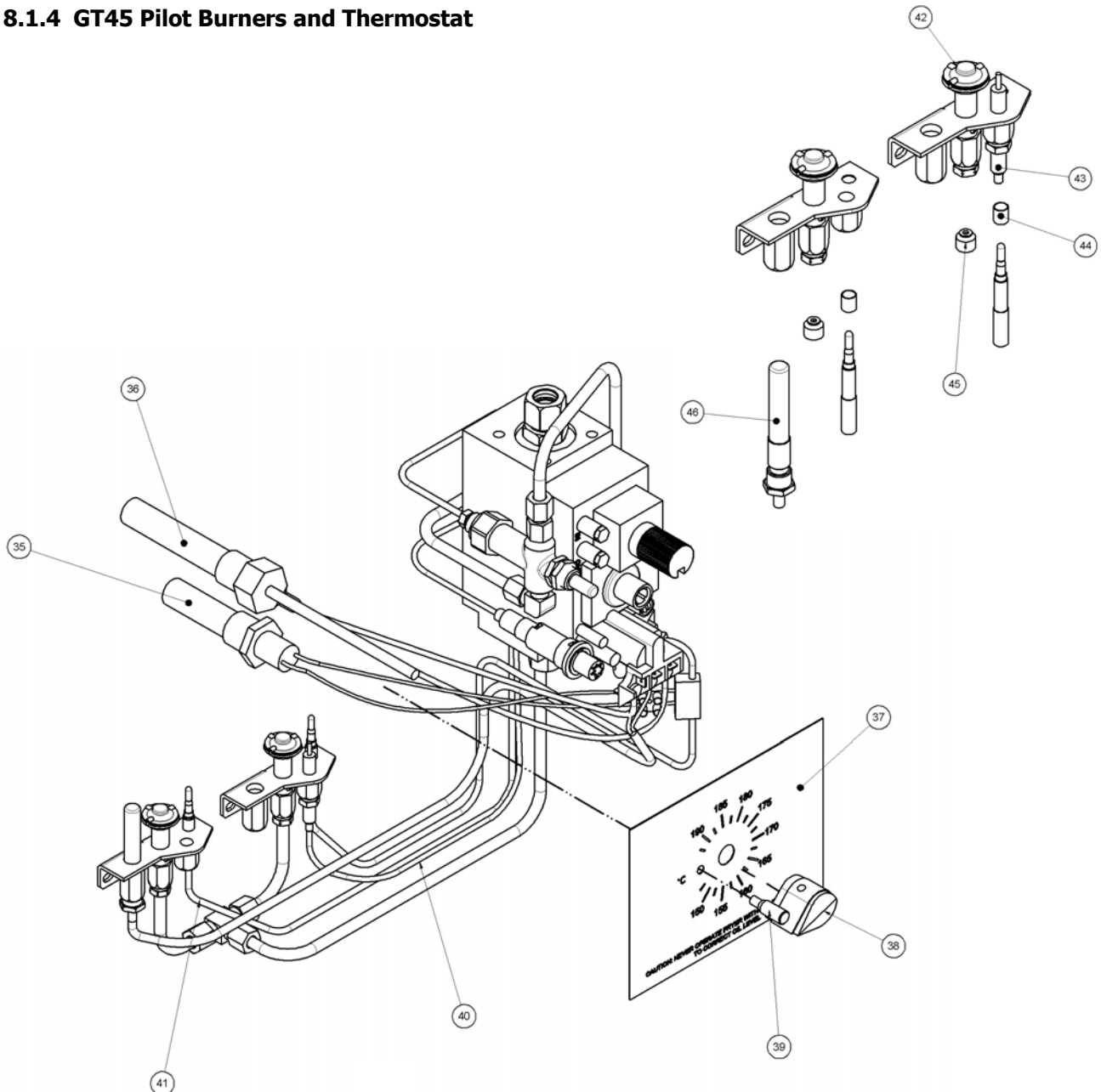
20 022575
 21 022845
 22 018089K
 23 019237
 24 227508
 25 032310
 032190 INJECTOR
 26 227636
 27 227638
 28 227639
 29 227131
 30 020628
 31 018111
 32 227779
 33 229511
 34 227694

DESCRIPTION

BURNER KIT
 TUBE, FLEXIBLE, SS, 1/2" O.D x 12"
 NOVA MILLIVOLT VALVE KIT
 FLAME FAILURE VALVE M1A/HP
 PIEZO IGNITOR M18
 INJECTOR 3.10mm
 1.90mm
 INJECTOR SUPPLY TUBE
 SUPPLY TUBE
 PILOT SUPPLY TUBE
 MANIFOLD 450 FRYER
 TEE - 3/8" COMPRESSION
 TEE 64x4 TITON FITTING
 PILOT TUBE
 INJECTOR ELBOW x3/8T
 BURNER INJECTOR MTG BRACKET

NAT
LPG/PROPANE

8.1.4 GT45 Pilot Burners and Thermostat

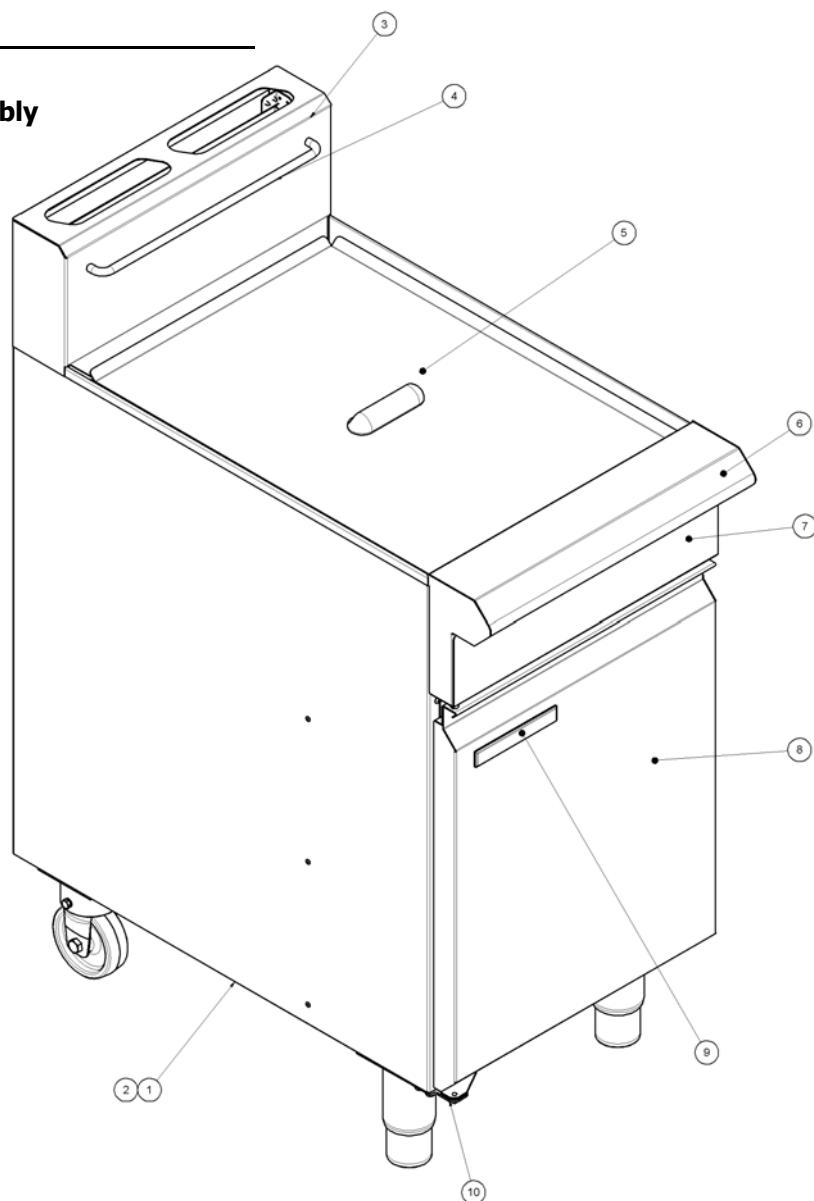
**ITEM PART NO**

35	018022K	OVERTEMP CONTROL KIT
36	018021K	THERMOSTAT KIT
37	228569	LABEL TEMP CONTROL GT45
38	018145	KNOB #8010-A SPECIAL-BLACK
39	018171	THERMOSTAT STOP -PLATED
40	018094	THERMOCOUPLE INTERRUPTED
41	227865	THERMOCOUPLE 850mm M8
42	018090K	PILOT BURNER KIT
43	018744	ELECTRODE
44	018743	THERMOCOUPLE SPACER
45	018091	PILOT SPUD - NAT 0.62mm
	018092	PILOT SPUD - LPG 0.35mm
	018972	PILOT INJECTOR 0.45mm
	018971	PILOT INJECTOR 0.30mm
46	018093	THERMOPILE

NAT ONLY
LPG ONLY
UK NAT ONLY
UK PROPANE ONLY

8.2 GT46

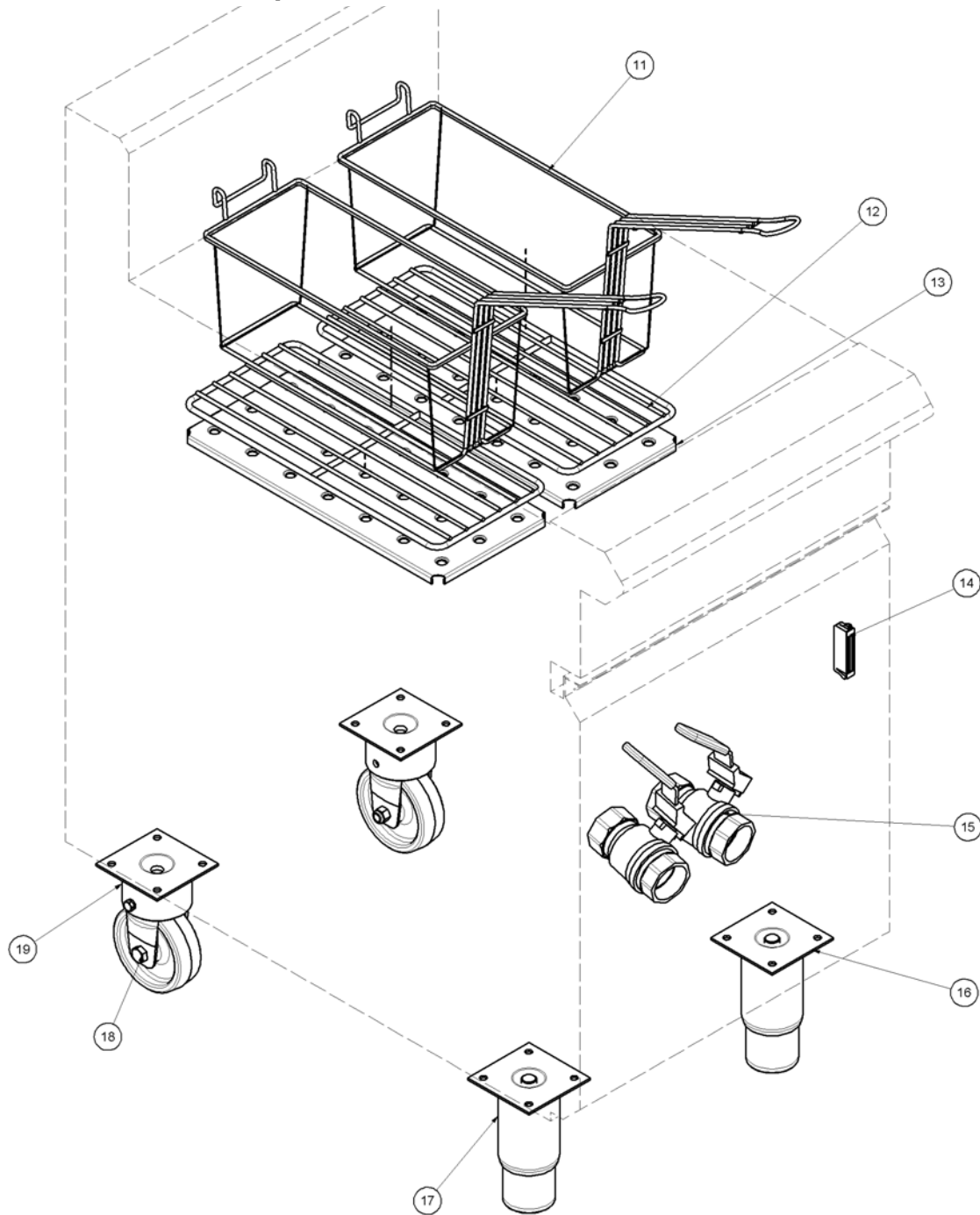
8.2.1 GT46 Main Assembly



ITEM PART NO DESCRIPTION

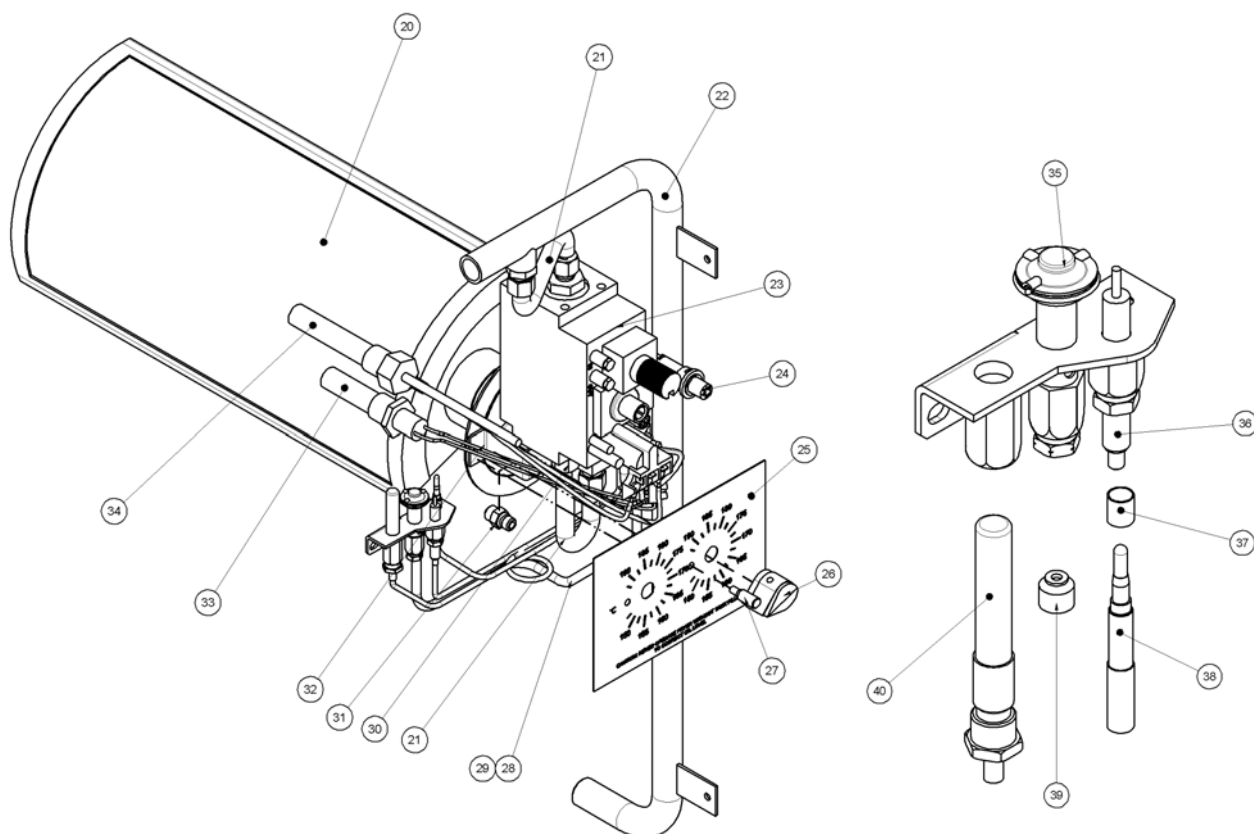
1	227511	FRYER SIDE PANEL RH
2	227512	FRYER SIDE PANEL LH
3	228770	SPLASHBACK 450 BS
4	227441 BASKET	HANGER 370mm
5	228761	LID 450 FRYER
6	227762	HOB FRONT WA BSEAL
7	227696	CONTROL PANEL GT45/46
8	230422	FRYER DOOR ASSEMBLY (NO BADGE)
227449		DOOR HANDLE
228846		DOOR OUTER
227453		DOOR INNER
	227466	FRYER CATCH RECEIVER
228132		TUBE CLIP
	228308	HINGE PIVOT WA
9	227960 BADGE	BLUESEAL
10	228300 HINGE	PLATE
228301		HINGE BUSH

8.2.2 GT46 Main Assembly

**ITEM PART NO DESCRIPTION**

11	018019	FRYER BASKET -STANDARD
12	228577	BASKET TRAY 450mm 2 PAN GAS
13	228565	FISH PLATE GT46
14	227856	MAGNETIC CATCH 02-10-201-10
15	018358	BALL VALVE
16	227852	LEG PLATE
17	227850	LEG 150mm (FLUSH STUD)
18	229674	REAR ROLLER ASSY
19	229671	LEG RING PLATE THREADED

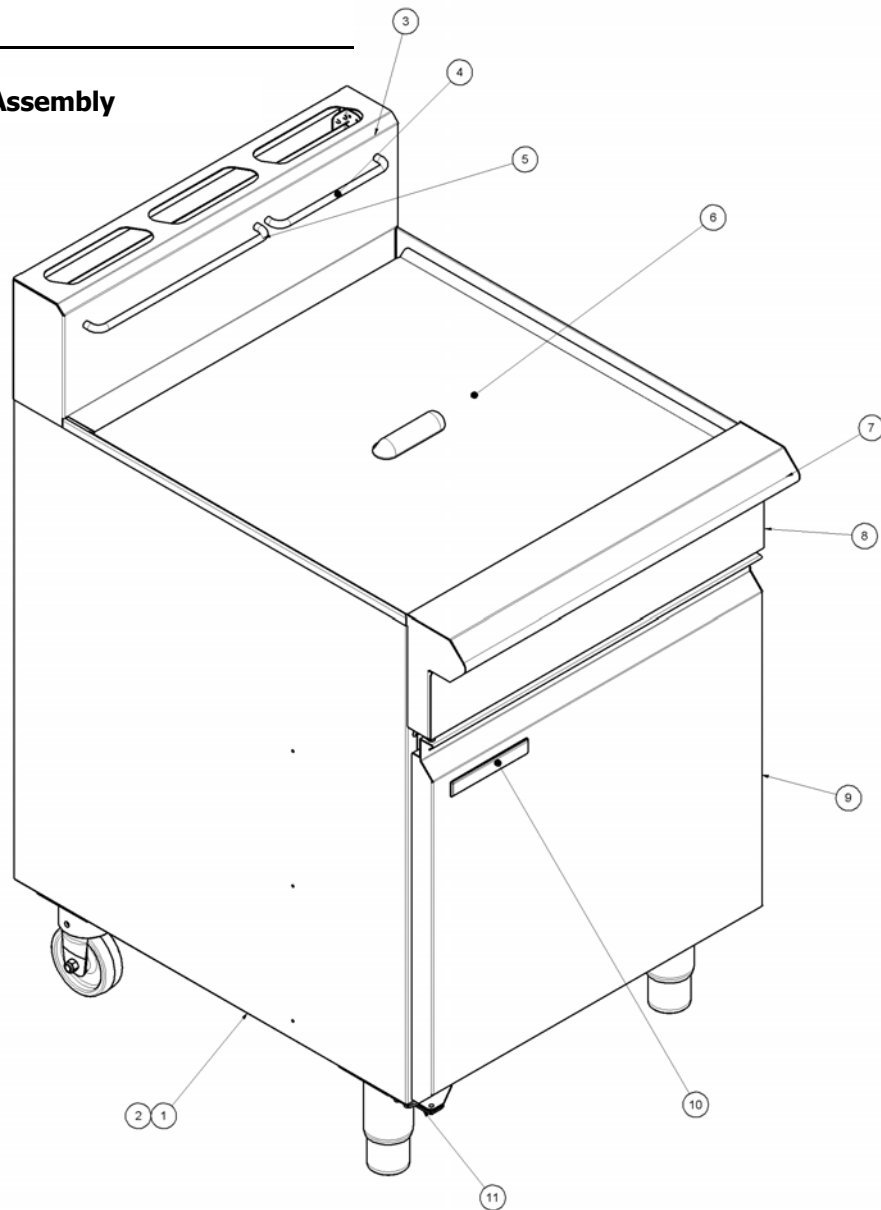
8.2.3 GT46 Burner and Thermostat Assembly



ITEM	PART NO	DESCRIPTION	
20	022575	BURNER KIT	
21	022845	TUBE,FLEXIBLE,SS,1/2"O.Dx12"	
22	227131	MANIFOLD 450 FRYER	
23	018089K	NOVA MILLIVOLT VALVE KIT	
24	227508	PIEZO IGNITOR M18	
25	228572	LABEL TEMP CONTROL GT46	
26	018145	KNOB #8010-A SPECIAL-BLACK	
27	018171	THERMOSTAT STOP -PLATED	
28	227649	PILOT SUPPLY TUBE RH	
29	227647	PILOT SUPPLY TUBE LH	
30	229511	INJECTOR ELBOW x3/8T	
31	032310	INJECTOR 3.10mm	
	032190	INJECTOR 1.90mm	NAT LPG
32	227694	BURNER INJECTOR MTG BRACKET	
33	018022K	OVERTEMP CONTROL KIT	
34	018021K	THERMOSTAT KIT	
35	018090K	PILOT BURNER KIT	
36	018744	ELECTRODE	
37	018743	THERMOCOUPLE SPACER	
38	018094	THERMOCOUPLE INTERRUPTED	
39	018091	PILOT SPUD - NAT 0.62mm	NAT ONLY
	018092	PILOT SPUD - LPG 0.35mm	LPG ONLY
	018972	PILOT INJECTOR 0.45mm	UK NAT ONLY
	018971	PILOT INJECTOR 0.30mm	UK LPG ONLY
40	018093	THERMOPILE	

8.3 GT60

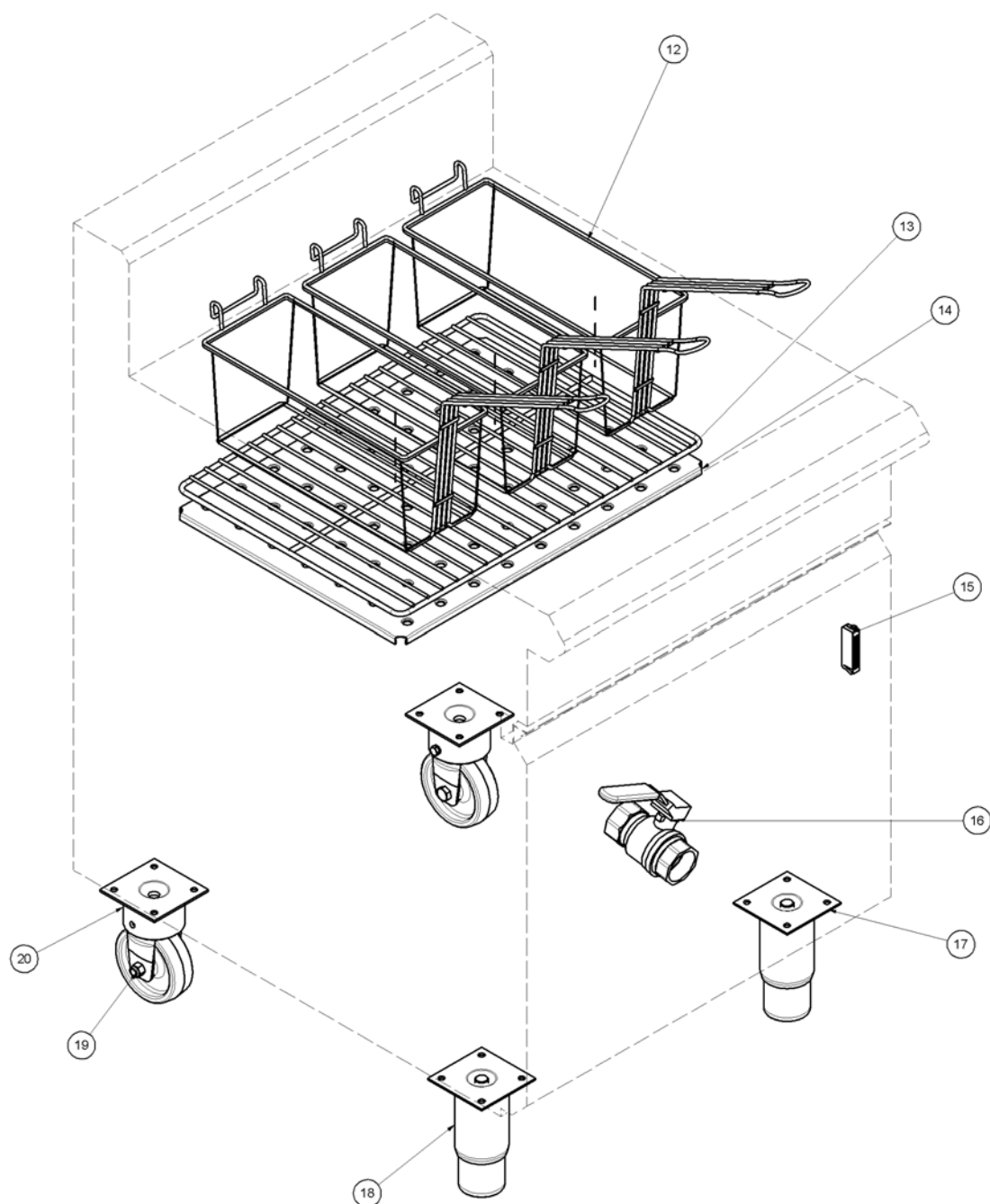
8.3.1 GT60 Main Assembly



ITEM PART NO DESCRIPTION

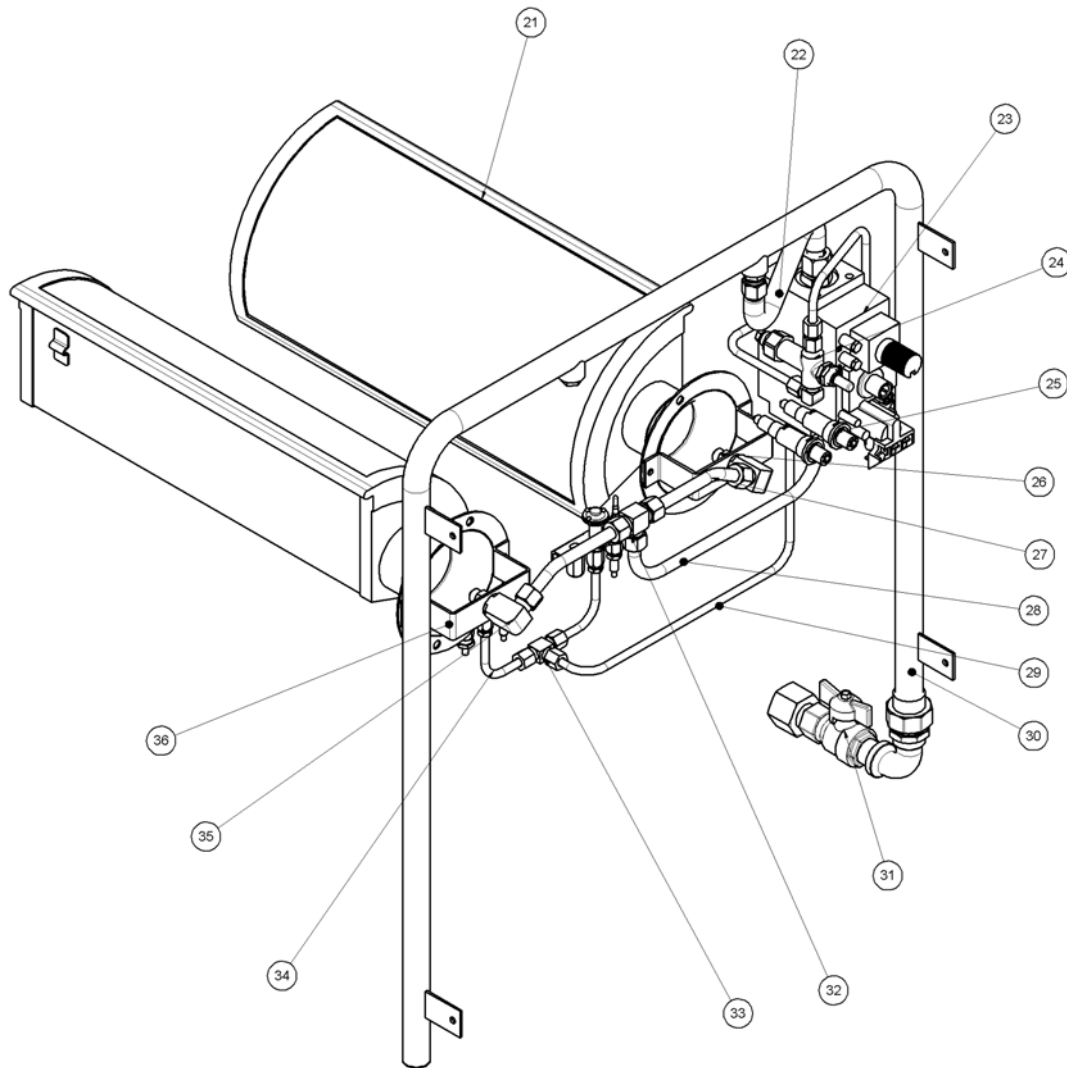
1	227511	FRYER SIDE PANEL RH
2	227512	FRYER SIDE PANEL LH
3	228776	SPLASHBACK
4	227747 BASKET	HANGER 305mm
5	227748 BASKET	HANGER 195mm
6	228762	LID 600 FRYER
7	227903	HOB FRONT WA BSEAL
8	227701	CONTROL PANEL GT60
9	230424	FRYER DOOR ASSEMBLY (NO BADGE)
	227459	DOOR HANDLE
	228847	DOOR OUTER
	227462	DOOR INNER
	227466	FRYER CATCH RECEIVER
	228132	TUBE CLIP
	228308	HINGE PIVOT WA
10	227960 BADGE	BLUESEAL
11	228300 HINGE	PLATE
	228301	HINGE BUSH

8.3.2 GT60 Main Assembly



ITEM	PART NO	DESCRIPTION
12	018019	FRYER BASKET -STANDARD
13	228129	BASKET TRAY 600mm
14	228128	FISH PLATE GT60
15	227856	MAGNETIC CATCH 02-10-201-10
16	018358	BALL VALVE
17	227852	LEG PLATE
18	227850	LEG 150mm (FLUSH STUD)
19	229674	REAR ROLLER ASSY
20	229671	LEG RING PLATE THREADED

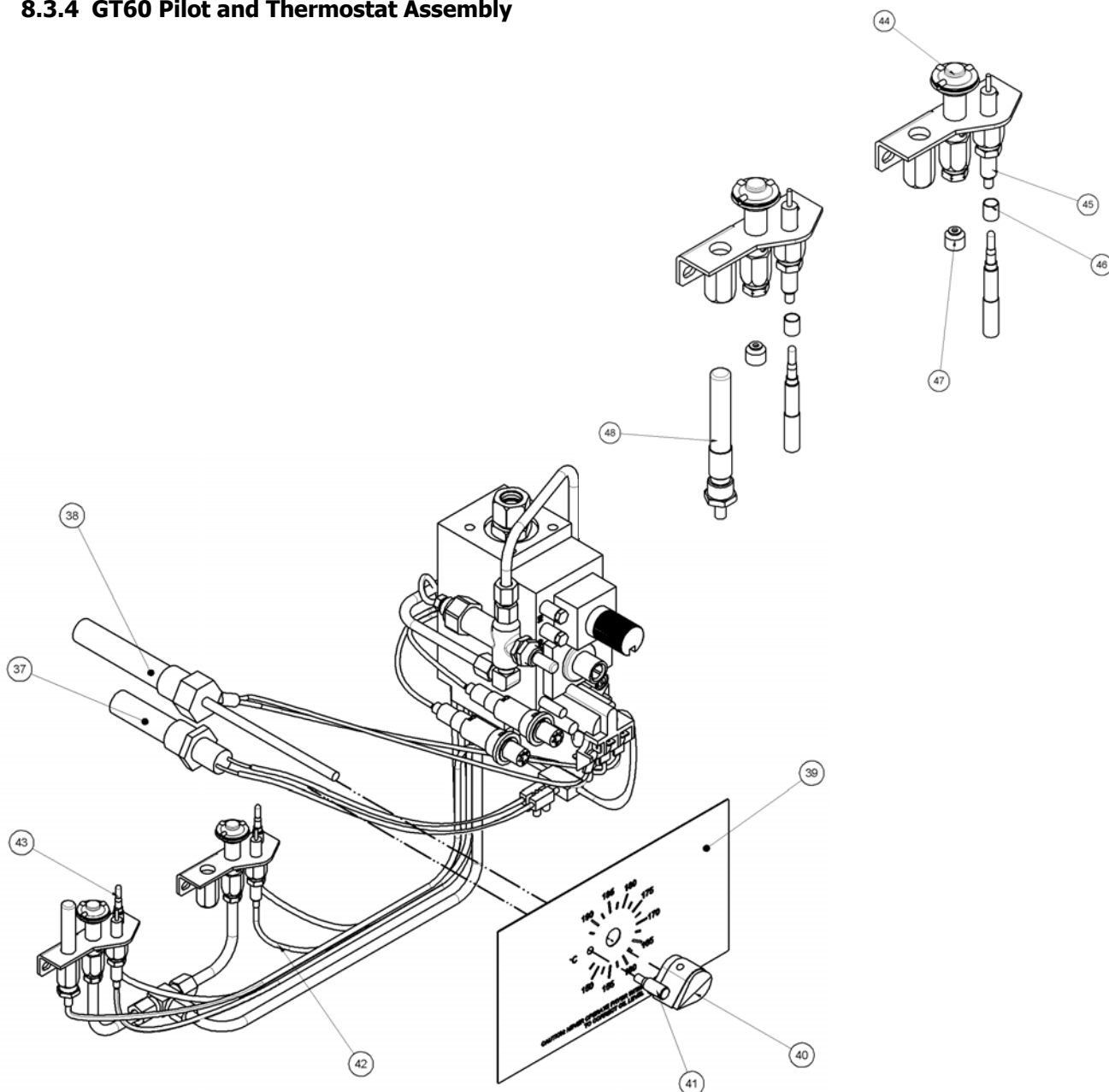
8.3.3 GT60 Main Burner Assembly



ITEM	PART NO	DESCRIPTION
21	022575	BURNER KIT
22	022845	TUBE,FLEXIBLE,SS,1/2"O.Dx12"
23	018089K	NOVA MILLIVOLT VALVE KIT
24	019237	FLAME FAILURE VALVE M1A/HP
25	227508	PIEZO IGNITOR M18
26	032310	INJECTOR 3.10mm
	032190	INJECTOR 1.90mm
27	227654	INJECTOR SUPPLY TUBE
28	227655	SUPPLY TUBE
29	227760	PILOT SUPPLY TUBE
30	227134	MANIFOLD 600 FRYER
31	023816	BALL VALVE 1/2" BSP M/F TEE
32	020628	TEE - 3/8" COMPRESSION
33	018111	TEE 64x4 TITON FITTING
34	227780	PILOT TUBE
35	229511	INJECTOR ELBOW x3/8T
36	227694	BURNER INJECTOR MTG BRACKET

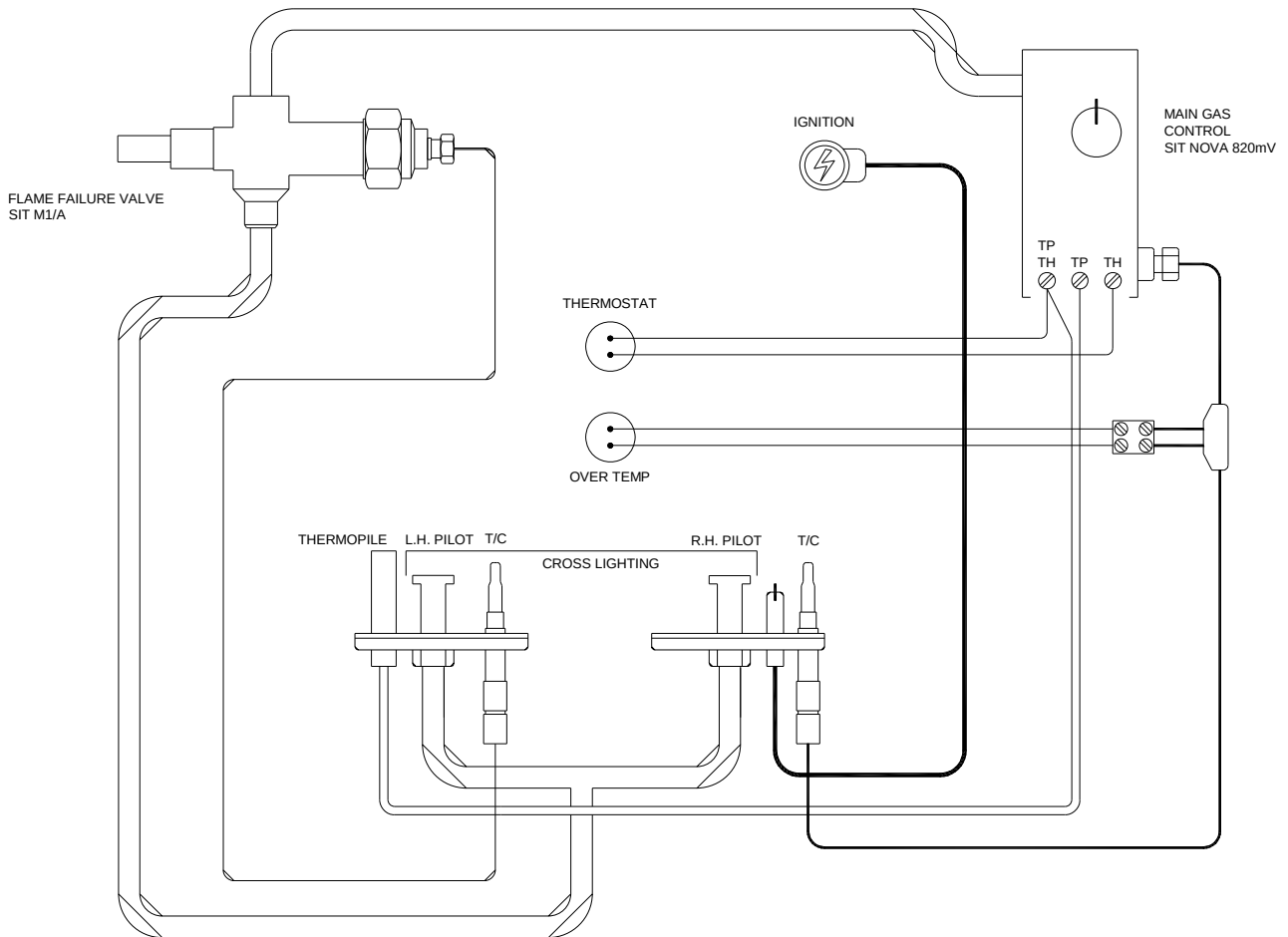
NAT
LPG

8.3.4 GT60 Pilot and Thermostat Assembly

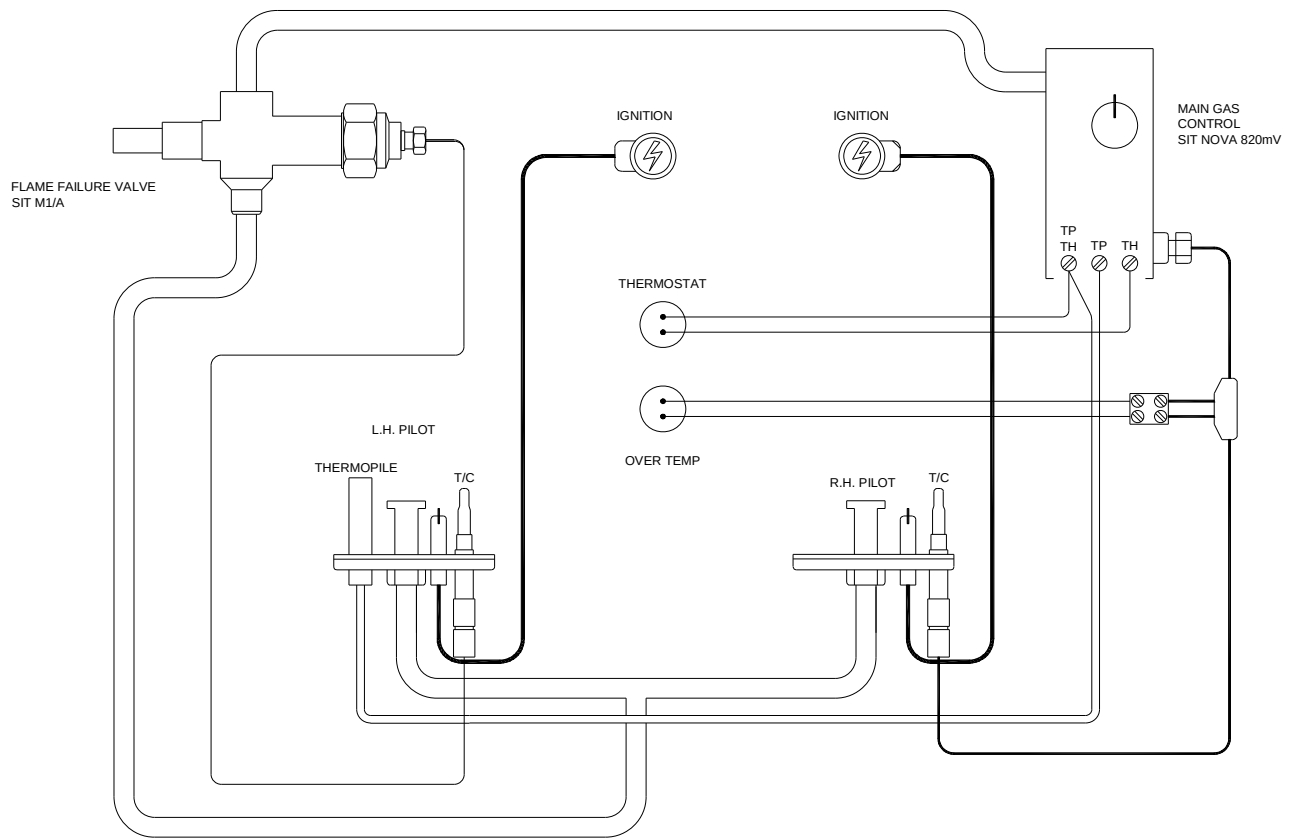


ITEM	PART NO	DESCRIPTION
1	06-7890	WHEEL ASSEMBLY
2	06-7891	TIRE 18X8.5
3	06-7892	BRAKE PAD SET
4	06-7893	SPRING SHOCK
5	06-7894	STEERING KNUCKLE
6	06-7895	SWAY BAR
7	06-7896	STRUT ROD
8	06-7897	LOWER BALL JOINT
9	06-7898	UPPER BALL JOINT
10	06-7899	AXLE SHAFT
11	06-7900	HUB AND DRUM
12	06-7901	WHEEL BEARING
13	06-7902	DRUM BRAKE
14	06-7903	DISC BRAKE
15	06-7904	ABS MODULE
16	06-7905	SPEED SENSOR
17	06-7906	TRAIL BRACKET
18	06-7907	SHOCK ABSORBER
19	06-7908	STABILIZER BAR
20	06-7909	COIL SPRING
21	06-7910	CONTROL ARM
22	06-7911	STEERING RACK
23	06-7912	POWER STEERING PUMP
24	06-7913	HYDRAULIC FLUID
25	06-7914	PSAID
26	06-7915	PSAID
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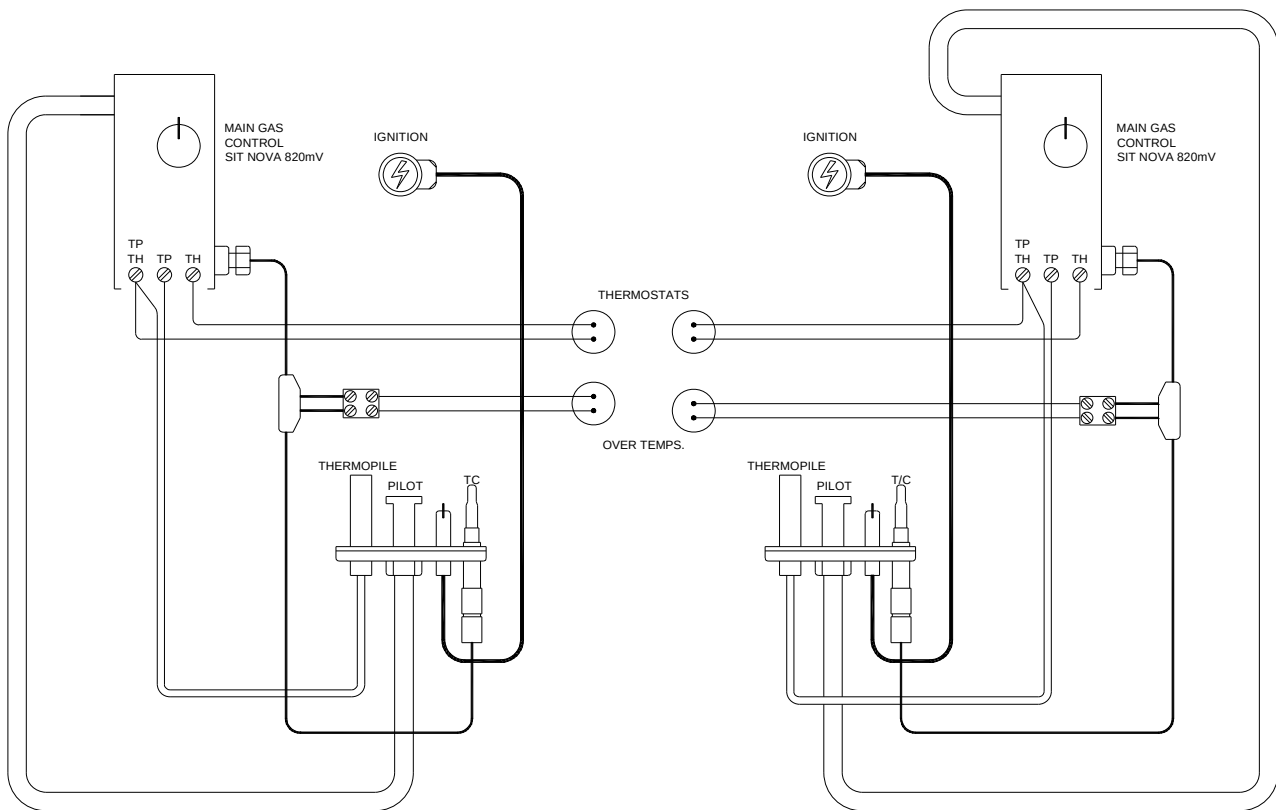
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38	018021K	THERMOSTAT KIT	
39	228634	LABEL TEMP CONTROL GT60	
40	018145	KNOB #8010-A SPECIAL-BLACK	
41	018171	THERMOSTAT STOP -PLATED	
42	018094	THERMOCOUPLE INTERRUPTED	
43	227865	THERMOCOUPLE 850mm M8	
44	018090K	PILOT BURNER KIT	
45	018744	ELECTRODE	
46	018743	THERMOCOUPLE SPACER	
47	018091	PILOT SPUD - NAT 0.62mm	NAT ONLY
	018092	PILOT SPUD - LPG 0.35mm	LPG ONLY
	018972	PILOT INJECTOR 0.45mm	UK NAT ONLY
	018971	PILOT INJECTOR 0.30mm	UK PROPANE ONLY
48	018093	THERMOPILE	

9.1 GT45 – Single Tank Fryer

9.2 GT60 – Single Tank Fryer



9.3 GT46 - Fryer—Twin Tank Fryer



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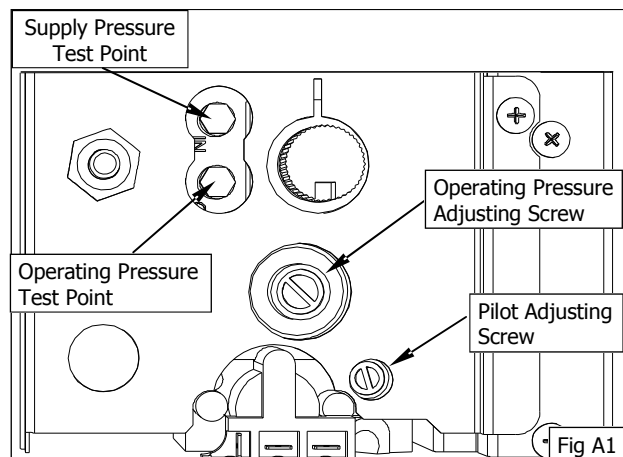
CAUTION :

Ensure the unit is isolated from the gas supply before commencing servicing.

NOTE:

- These conversions should only be carried out by qualified service persons. All connections must be checked for leaks before re-commissioning the appliance.
- For all relevant information and specifications refer to the table at the end of this section.

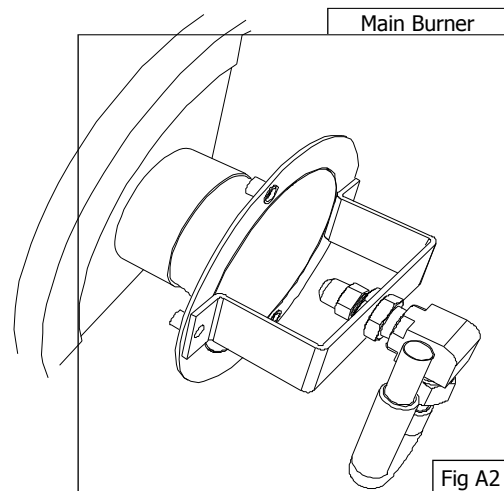
1. Ensure that the gas supply has been turned off.
2. Open the front door of the unit to access the main burner and pilot burner injectors.
3. Connect a manometer to the upper test point (Line Pressure) on the gas control valve located through the access hole in the enamelled control panel. Turn on the gas and ensure that the supply pressure is within the specification shown in the 'Gas Specifications Table' at the end of this section.

**Main Burner Injectors**

1. Unscrew and remove the main burner injectors (12.7mm A/F) located in front of main burner venturi openings.
2. Determine the correct injectors for the corresponding gas from the 'Gas Specifications Table' at the end of this section.
3. Screw in the correct sized injectors. Refer to the 'Gas Specifications Table' at the end of this section.

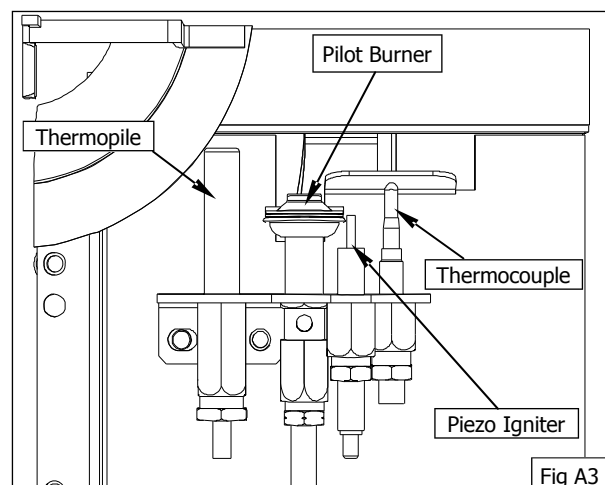
Pilot Burner Injectors

1. Unscrew the pilot supply tube from the pilot burner fitted to the mounting bracket and remove the pilot injector.



NOTE: On appliances fitted with piezo igniter electrodes, to prevent damage to the electrode, unscrew and remove the electrode from the mounting bracket before unscrewing the pilot supply tube.

2. Determine the correct sized pilot injectors for the corresponding gas from the table overleaf.
3. Fit the correct sized injector into the pilot burner and re-connect the gas supply tube to the pilot burner.
4. Refit the piezo igniter electrode to the mounting bracket and tighten hand tight.



Gas Controller

NOTE: For Twin Tank Fryers only, the units will be fitted with 2 gas controllers. These controllers operate independently of each other. The gas regulators and pilot adjustment will need to be carried out separately for each gas controller.

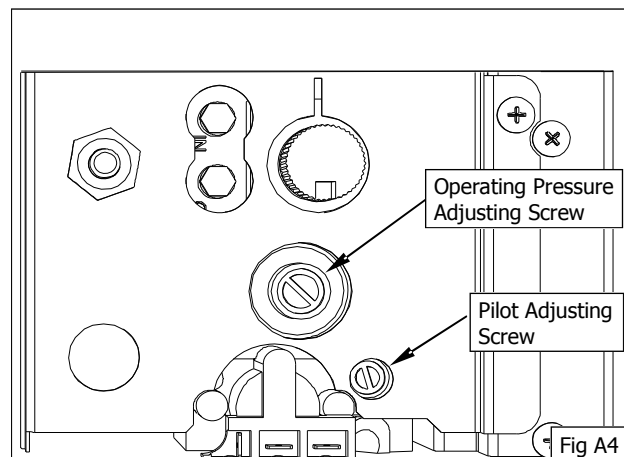
Main Burner Operating Pressure Adjustment

- Connect a manometer to the lower test point (Burner Pressure) on the gas control valve located through the access hole in the control panel.
- Remove the slotted cap located directly below the main gas control knob on the gas control valve, this will reveal an operating pressure adjusting screw.
- Light the main burners and adjust the adjusting screw to obtain the correct burner pressure for the type of gas being used. Refer to the specification table shown at the end of this section.
- Refit the slotted cap to the screw adjustment point.

NOTE: For GT46 - twin tank fryer, repeat Items a) to d) to adjust the main burner controlled by the second gas control valve.

Pilot Burner Flame Adjustment

- Once the main burner operating pressure has been set, the pilot burner supply can be adjusted so that impingement of the pilot flame on the thermocouple and thermopile is correct and the main burner pilot flame ignites the main burners satisfactorily.
- Adjust the pilot flame size by adjusting the pilot burner adjusting screw on the lower right side of the gas control valve, below the gas control knob.
- Adjust this screw so that the flame impingement on the thermopile and thermocouple is correct and that the flame of the pilot burner is approximately 1" long for main burner ignition.
Anti-clockwise rotation of the adjustment screw will increase the size of the pilot flame.



NOTE: (For GT46 - twin tank fryer, repeat Items a) to c) to adjust the pilot burner controlled by the second gas control valve).

On completion of the main and pilot burner adjustments, check all gas connections for leakages and then turn off the main burners at the gas control knob. Turn off the main gas supply.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES.

Gas Type Identification Label

On completion of the gas conversion, replace the gas type identification label located at:-

- The rear of the appliance, above the gas connection.
- Beside the rating plate.

Commissioning

Before leaving the converted installation;

1. Check all gas connections for leakages using soapy water or other gas detecting equipment.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES.

2. Check the following functions in accordance with the operating instructions specified in the "Operation" section of the User manual.
 - Light the Pilot Burners.
 - Light the Main Burners.
 - Check the Thermostat operation.
 - Ensure that all the controls operate correctly.

NOTE: If for some reason it is not possible to get the appliance to operate correctly, shut off the gas supply and contact the supplier of this appliance.

Gas Specifications

		Natural Gas. (G20)	LP Gas (Propane) (G31)
Main Burner Injectors		Ø 3.10 mm	Ø 1.90 mm
Pilot Burner Injectors	Non-UK	0.62	0.35
	UK Only	0.45	0.30
Pilot Screw Adjustment		Full Out (CCW)	1½ turns out (CCW)
Burner Operating Pressure		0.98 kPa (*) (9.8 mbar)	2.50 kPa (*) (25 mbar)
Supply Pressure	Non-UK	1.13 - 2.0 kPa	2.75 - 3.0 kPa
	UK Only	20 mbar	37 mbar

NOTE:

- * The burner operating pressure is to be measured at the upper test point (Supply Pressure) on the gas control valve located behind the access door and through the access hole in the control panel, this is to be carried out with all burners operating at the "High Flame" setting. Refer to the 'Gas Conversion and Specification' Section for further details.

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